					10983-11126 12602-12692 13301-13836 14551-14721 14736-15032 16555-16595 17012-17123
HCUGI64	9198	746608	AC010614	41551	1-441
HCUGI64	9198	746608	AC018791	41552	1-441
HCUGI64	9198	746608	AC010614	41553	1-168
HCUGI64	9198	746608	AC018791	41554	1-168
HCUGH79	9199	775206	AC010858	41555	1-174 652-1574 2173-2521 3070-3184
HCUGH79	9199	775206	AC048348	41556	1-921
HCUGH79	9199	775206	AC010858	41557	1-454
HCUGH79	9199	775206	AC048348	41558	1-453
HCUGH79	9199	775206	AC010858	41559	1-419
HCUGH64	9200	746600	AC012488	41560	1-682 1065-1564 2415-2887 3929-4065 4155-4238 4595-6153 6193-6499
HCUGH64	9200	746600	AC012488	41561	1-432
HCUGH52	9201	726052	AP000822	41562	1-547
HCUGH52	9201	726052	AC008102	41563	1-548
HCUGH52	9201	726052	AC069080	41564	1-548
HCUGH52	9201	726052	AP000822	41565	1-87
HCUGH52	9201	726052	AC069080	41566	1-105
HCUGH52	9201	726052	AC069080	41567	1-87
HCUGH42	9203	713782	AC073979	41568	1-859
HCUGH42	9203	713782	AC073979	41569	1-153
HCUGD30	9204	850041	AC006375	41570	1-506
HCUGD30	9204	850041	AC006375	41571	1-424
HCUGC25	9205	464029	AC024558	41572	1-469
HCUGC25	9205	464029	AC068818	41573	1-347 1536-2276 2531-2999
HCUGC25	9205	464029	AC024558	41574	1-736
HCUGC25	9205	464029	AC024558	41575	1-425
HCUGC25	9205	464029	AC068818	41576	1-425
HCUGB93	9206	850043	AC012307	41577 ·	1-145 502-876 3975-4260 4283-4886 5427-5515 6634-7186 8425-8562 9423-9563 11012-11177 11704-11883 11895-15462 16642-16745

					16979-17496
					17910-18196
					18991-19724
					19756-20835
HCUGB93	9206	850043	AC004020	41578	1-145
					502-876
					3977-4262
					4285-4888
					5429-5517
					6636-7189
					8428-8565
					9426-9566
					11015-11180
					11707-11886
					11898-15466
					16983-17500
					17913-18199
					18994-19727
					19759-20838
					23248-24460
					24714-25806
HCUGB93	9206	850043	AC012307	41579	1-1863
					1871-1999
					2101-4195
					4252-4364
					4501-6111
					6255-6345
					6383-6556
					6710-6859
					7047-7325
					7529-8047
HCUGB93	9206	850043	AC004020	41580	1-1672
					2401-4011
					4155-4245
					4283-4456
					4610-4759
					4947-5225
					5429-5947
HCUGB93	9206	850043	AC004020	41581	1-270
					1814-2000
HCUGB14	9211	854035	AC026334	41582	1-359
HCUFW11	9213	850054	AL359235	41583	1-594
HCUFW11	9213	850054	AL359235	41584	1-195
HCUFW09	9214	625658	AC005071	41585	1-204
HCUFW09	9214	625658	AC004166	41586	1-112
					220-373
					496-699
HCUFW09	9214	625658	AC005071	41587	1-603
HCUFW09	9214	625658	AC004166	41588	1-572
HCUFW09	9214	625658	AC004166	41589	1-119
HCUFT37	9215	706467	AC008375	41590	1-611
HCUFT37	9215	706467	AC008733	41591	1-608
HCUFT37	9215	706467	AC008375	41592	1-132
HCUFT37	9215	706467	AC008733	41593	1-132
HCUFQ08	9216	959567	AC076962	41594	1-607
HCUFQ08	9216	959567	AC076962	41595	1-308
HCUFO96	9218	796434	AC021652	41596	1-379

HCUFO96	9218	796434	AC063920	41597	1-378
HCUFO96	9218	796434	AC022194	41598	1-379
HCUFO96	9218	796434	AC021652	41599	1-5732 6873-6965 7172-7838
HCUFO96	9218	796434	AC063920	41600	1-5732 6510-6821 6871-6963
HCUFO96	9218	796434	AC022194	41601	1-5732 6873-6965 7172-7838
HCUFO93	9219	792376	AC012057	41602	1-470
HCUFO93	9219	792376	AC012057	41603	1-138
HCUFO93	9219	792376	AC012057	41604	1-65 1336-1440
HCUFO68	9220	753083	AC027414	41605	1-270
HCUFO68	9220	753083	AC022795	41606	1-300
HCUFO68	9220	753083	AL353577	41607	1-279
HCUFO68	9220	753083	AL157775	41608	1-280
HCUFO68	9220	753083	AC027473	41609	1-227
HCUFO68	9220	753083	AC069217	41610	1-243
HCUFO68	9220	753083	AL024508	41611	1-49 952-1091 2824-2931 5098-5525 7846-7976 8038-8124 8830-9004 10038-10542 10841-10924 11067-11628 11925-12395 13587-14022 22411-22724 22758-23047 23305-23679 25698-26482 27522-27788 29256-29743 30550-30973 34300-34961 35617-36572 36821-37358 38402-38737 38763-39510 39540-39892 40168-40279 40791-41198 41770-41945 46334-46579 49544-49872 50565-50838 50874-51352 51593-51707 52562-52677 53084-53414 54823-55298

					55333-55411 55814-57296
HCUFO43	9221	715337	AP001281	41612	1-314
HCUFO43	9221	715337	AL353659	41613	1-202
HCUFO43	9221	715337	AC012118	41614	1-292
HCUFO43	9221	715337	AC019275	41615	1-290
HCUFO43	9221	715337	AC009859	41616	1-235
HCUFO43	9221	715337	AC025829	41617	1-288
HCUFO43	9221	715337	AC023924	41618	1-250
HCUFO43	9221	715337	AC012233	41619	1-353
HCUFO43	9221	715337	AC068213	41620	1-254
HCUFO24	9223	677273	AC011342	41621	1-456
HCUFO24	9223	677273	AC011342	41622	1-537 559-667 1082-1179 1533-1986 2878-3137 3668-4125
HCUFO11	9224	967156	AC037487	41623	1-439
HCUFO11	9224	967156	AC005332	41624	1-442
HCUFO11	9224	967156	AC005332	41625	1-212
HCUFO11	9224	967156	AC005332	41626	1-195
HCUFL40	9227	711242	AL137852	41627	1-581
HCUFL40	9227	711242	AL137852	41628	1-397
HCUFL40	9227	711242	AL137852	41629	1-260
HCUFK35	9228	706460	AL078605	41630	1-1068
HCUFK35	9228	706460	AL078605	41631	1-574
HCUFK09	9229	961145	AC068785	41632	1-469
HCUFK09	9229	961145	AC006276	41633	1-469
HCUFK09	9229	961145	AC068785	41634	1-186 194-795 2432-4037
HCUFK09	9229	961145	AC006276	41635	1-1284 2726-2927
HCUFK09	9229	961145	AC006276	41636	1-186 194-795 2432-4037
HCUFJ08	9230	850074	AL160403	41637	1-223
HCUFJ08	9230	850074	AL160403	41638	1-604
HCUFF74	9232	765662	AC068795	41639	1-366 543-937
HCUFF74	9232	765662	AC022510	41640	1-366 543-937
HCUFF74	9232	765662	AC025262	41641	1-366 543-937
HCUFF74	9232	765662	AC022510	41642	1-115
HCUFF74	9232	765662	AC025262	41643	1-115
HCUFE55	9233	731843	AL031297	41644	1-131 679-912 1349-1654 5029-5252 9376-9493 9736-10204 10953-11302 11525-12122 16952-17243

					20848-21153
					21457-22062
					25001-25396
					26949-27023
					28082-28430
					29411-29548
					29680-30123
					30797-30981
					31120-31308
					31959-32425
					34705-34876
					35061-35527
					37354-37502
					37933-38190
					38381-39650
					39839-41256
					41488-41511
					41519-41916
					41983-42104
					42275-42855
					43391-43461
					43574-43656
					43857-44292
					44317-44421
					46115-46231
					47800-48512
					48841-49208
					50149-50247
					51377-51502
					52685-52984
					53118-53307
					56807-56996
					61413-61503
					63173-63224
					63579-63659
					64464-64659
					66082-66208
					66720-66871
					67311-67472
					70450-70513
					71257-71408
					72162-72215
HCUFE55	9233	731843	AL031297	41645	1-648
HCUFE54	9234	730745	AC027124	41646	1-815
HCUFE54	9234	730745	AC022842	41647	1-854
HCUFE54	9234	730745	AC022842	41648	1-304
HCUFE54	9234	730745	AC027124	41649	1-304
HCUFD70	9235	757280	AC007734	41650	1-2855
HCUFD70	9235	757280	AP001077	41651	1-2841
HCUFD70	9235	757280	AC007734	41652	1-758
HCUFD70	9235	757280	AP001077	41653	1-758
HCUFD70	9235	757280	AC007734	41654	1-625
HCUFD70	9235	757280	AP001077	41655	1-625
HCUEQ12	9237	922556	AL031847	41656	1-1841
HCUEO74	9239	576576	AC073219	41657	1-123
HCUEO74	9239	576576	AC023864	41658	1-142
HCUEO74	9239	576576	AC010882	41659	1-135

HCUEO74	9239	576576	AL136171	41660	1-61
HCUEO74	9239	576576	AC023315	41661	1-108
HCUEO74	9239	576576	AC068682	41662	1-153
HCUEO74	9239	576576	AC026556	41663	1-114
HCUEO74	9239	576576	AC011101	41664	1-100
HCUEO74	9239	576576	AC027584	41665	1-162
HCUEO74	9239	576576	AC031987	41666	1-125
HCUEO74	9239	576576	AL365209	41667	1-109
HCUEO74	9239	576576	AC073367	41668	1-108
HCUEO74	9239	576576	AC008470	41669	1-129
HCUEO74	9239	576576	AC055805	41670	1-143
HCUEO74	9239	576576	AC027264	41671	1-147
HCUEO74	9239	576576	AL161613	41672	1-63
HCUEO74	9239	576576	AC073446	41673	1-140
HCUEO74	9239	576576	AL162741	41674	1-45
HCUEO74	9239	576576	AC025975	41675	1-136
HCUEO74	9239	576576	AC004170	41676	1-90
HCUEO74	9239	576576	AF287957	41677	1-122
HCUEO74	9239	576576	AL161613	41678	1-129
HCUEO74	9239	576576	AC073446	41679	1-52 2626-2925
HCUEO74	9239	576576	AC023864	41680	1-1485 1590-4704
HCUEO74	9239	576576	AC027584	41681	1-368
HCUEO74	9239	576576	AL162741	41682	1-102
HCUEO74	9239	576576	AC004170	41683	1-498 742-1013 1596-1878 2017-2131 2550-3098
HCUEO74	9239	576576	AF287957	41684	1-1090
HCUEO20	9240	669764	AC024339	41685	1-559
HCUEO20	9240	669764	AL355339	41686	1-559
HCUEO20	9240	669764	AL360230	41687	1-559
HCUEM93	9241	792424	AC012036	41688	1-597
HCUEM93	9241	792424	AC012036	41689	1-671
HCUEM93	9241	792424	AC012036	41690	1-503
HCUEL07	9244	953587	AC011004	41691	1-549
HCUEG27	9245	683541	AC025006	41692	1-709
HCUEG27	9245	683541	AC025006	41693	1-817
HCUEG27	9245	683541	AC025006	41694	1-349
HCUDY74	9248	839955	AC007871	41695	1-506
HCUDY74	9248	839955	AC007871	41696	1-470
HCUDU18	9250	850099	AC025744	41697	1-279
HCUDU18	9250	850099	AC025744	41698	1-842
HCUDU18	9250	850099	AC025744	41699	1-2090 2166-3798 3918-4165 4472-5175 5246-5397 5984-6091 6165-6252 6432-7007 7092-7159 7243-7380 7863-7972

					8427-9018 9773-9843 10030-10339 11078-12030
HCUDQ45	9252	881366	AC008985	41700	1-991 1341-1665 1883-1983 2587-2743
HCUDQ45	9252	881366	AC008985	41701	1-202
HCUDQ45	9252	881366	AC008985	41702	1-507
HCUDN89	9253	811185	AP002437	41703	1-466 670-1788 1900-1992 2076-2165 2278-2396 2944-3006 3144-3223 3325-3434 3527-3643 3723-4357
HCUDN89	9253	811185	AC005849	41704	1-139 496-538 635-758 1040-1112 2567-3032 3236-4354 4466-4558 4638-4752 4844-4962 5510-5572 5710-5789 5891-6000 6093-6209 6289-6923
HCUDN89	9253	811185	AP002437	41705	1-364
HCUDN89	9253	811185	AC005849	41706	1-856 2667-3032
HCUDN71	9255	862116	AC013270	41707	1-1044
HCUDN71	9255	862116	AC013270	41708	1-343
HCUDK08	9256	959679	AC025489	41709	1-721
HCUDK08	9256	959679	AC025706	41710	1-720
HCUDK08	9256	959679	AL357150	41711	1-720
HCUDK08	9256	959679	AC025706	41712	1-343
HCUDK08	9256	959679	AL357150	41713	1-343
HCUDG26	9258	681985	AL157828	41714	1-434
HCUDG26	9258	681985	AC009450	41715	1-434
HCUDG26	9258	681985	AC009919	41716	1-433
HCUDG26	9258	681985	AL157882	41717	1-434
HCUDG26	9258	681985	AC009919	41718	1-325
HCUDG26	9258	681985	AL157882	41719	1-325
HCUDD07	9259	953588	AC009475	41720	1-366
HCUDD07	9259	953588	AC009475	41721	1-433
HCUDD07	9259	953588	AC009475	41722	1-116
HCUCJ14	9261	659221	AC005096	41723	1-1132
HCUCJ14	9261	659221	AC005096	41724	1-345
HCUCJ14	9261	659221	AC005096	41725	1-125

HCUCI23	9262	676276	AL353632	41726	1-441
HCUCI23	9262	676276	AL353601	41727	1-441
HCUCI23	9262	676276	AC053492	41728	1-441
HCUCI23	9262	676276	AC053492	41729	1-388
HCUCG40	9264	800153	AC055729	41730	1-156
HCUCG40	9264	800153	AC055729	41731	1-325
HCUCG40	9264	800153	AC055729	41732	1-408
HCUCG07	9265	953823	AP001615	41733	1-295
HCUCG07	9265	953823	AP001614	41734	1-295
HCUCD83	9266	781346	AC027011	41735	1-42 64-126 851-937 2029-2669
HCUCD83	9266	781346	AP001153	41736	1-119 844-930 2022-2662
HCUCD83	9266	781346	AP002787	41737	1-119 844-930 2022-2662
HCUCD83	9266	781346	AC027011	41738	1-366
HCUCD83	9266	781346	AP001153	41739	1-366
HCUCD83	9266	781346	AP002787	41740	1-366
HCUCD05	9267	932333	AL133410	41741	1-619
HCUCD05	9267	932333	AL133410	41742	1-272
HCUCD05	9267	932333	AL133410	41743	1-417
HCUBX45	9268	850122	AL139330	41744	1-70 302-414 971-1087 1452-1568 1884-2068 2234-2332 4394-4616 4721-4796 6715-6886 7287-7462 9124-9529 10146-10280 11951-12063 12629-14033 14329-15062 15274-15484 15623-15918 16216-16396 16622-16727 17165-17695 18266-18434 18908-22465
HCUBX45	9268	850122	AL135907	41745	1-532
HCUBX45	9268	850122	AL135907	41746	1-169
HCUBX45	9268	850122	AL135907	41747	1-106
HCUBV91	9269	790368	AC073637	41748	1-443
HCUBV91	9269	790368	AC002433	41749	1-443
HCUBT35	9270	850126	AP001139	41750	1-1144 1264-1760
HCUBT35	9270	850126	AC055755	41751	1-1144 1264-1760

					2024-2373
					2540-2625
HCUBT35	9270	850126	AP000645	41752	1-1144
					1264-1761
HCUBT35	9270	850126	AC055755	41753	1-184
HCUBT35	9270	850126	AP000645	41754	1-184
HCUBT35	9270	850126	AP001139	41755	1-184
HCUBS07	9271	953861	AL355345	41756	1-392
HCUBS07	9271	953861	AL033518	41757	1-392
HCUBS07	9271	953861	AL355345	41758	1-597
HCUBS07	9271	953861	AL355345	41759	1-393
HCUBS07	9271	953861	AL033518	41760	1-597
HCUBS07	9271	953861	AL033518	41761	1-393
HCUBP48	9274	577289	AL022171	41762	1-412
HCUBP48	9274	577289	AL022171	41763	1-273
HCUBP48	9274	577289	AL022171	41764	1-386
HCUBP34	9275	576462	AC025503	41765	1-133
HCUBP34	9275	576462	AC019339	41766	1-133
HCUBP34	9275	576462	AC019339	41767	1-484
HCUBO67	9277	526489	AC018510	41768	1-273
HCUBO67	9277	526489	AC021320	41769	1-273
HCUBO67	9277	526489	AC018510	41770	1-222
HCUBO67	9277	526489	AC018510	41771	1-138
HCUBO67	9277	526489	AC021320	41772	1-138
HCUBM73	9278	577294	AL158827	41773	1-220
					520-1189
HCUBM73	9278	577294	AL160055	41774	1-222
					481-1567
HCUBM73	9278	577294	AC009485	41775	1-220
					520-1189
HCUBM73	9278	577294	AL158827	41776	1-398
HCUBM73	9278	577294	AL160055	41777	1-86
HCUBM73	9278	577294	AL158827	41778	1-125
HCUBM73	9278	577294	AL160055	41779	1-398
HCUBM73	9278	577294	AC009485	41780	1-398
HCUBM73	9278	577294	AC009485	41781	1-125
HCUBM49	9279	722190	AC074381	41782	1-999
HCUBM49	9279	722190	AC007224	41783	1-999
HCUBM49	9279	722190	AC074381	41784	1-352
HCUBM49	9279	722190	AC007224	41785	1-352
HCUBG69	9282	757752	AC000005	41786	1-115
HCUBG69	9282	757752	AC000005	41787	1-492
HCUBG69	9282	757752	AC000005	41788	1-283
HCUBG43	9283	576468	AC023470	41789	1-377
HCUBG43	9283	576468	AC024721	41790	1-377
HCUBG43	9283	576468	AC005264	41791	1-377
HCUBG43	9283	576468	AC023470	41792	1-103
HCUBG43	9283	576468	AC024721	41793	1-103
HCUBE49	9285	723175	AC021755	41794	1-243
HCUBE49	9285	723175	AC025429	41795	1-243
HCUBE49	9285	723175	AC022827	41796	1-243
HCUBE49	9285	723175	AC021755	41797	1-331
HCUBE49	9285	723175	AC022827	41798	1-331
HCUBE49	9285	723175	AC025429	41799	1-331
HCUBB68	9287	752247	AP001388	41800	1-840

HCUBB68	9287	752247	AC015669	41801	1-840
HCUBB68	9287	752247	AC015669	41802	1-313
HCUBA93	9288	792515	AC025469	41803	1-909 975-1500
HCUBA93	9288	792515	AC025469	41804	1-193 320-414
HCUBA93	9288	792515	AC025469	41805	1-402
HCUAZ01	9289	917266	AC024073	41806	1-283
HCUAZ01	9289	917266	AC024073	41807	1-319
HCUAW03	9290	924897	AC008666	41808	1-767
HCUAW03	9290	924897	AC008641	41809	1-430
HCUAW03	9290	924897	AC008707	41810	1-430
HCUAW03	9290	924897	AC008666	41811	1-296
HCUAW03	9290	924897	AC008666	41812	1-677 1113-1549 3164-3945 4021-4166 4928-5523
HCUAW03	9290	924897	AC008641	41813	1-296
HCUAW03	9290	924897	AC008641	41814	1-677 1113-1549 3480-3944 4020-4165 4927-5522
HCUAW03	9290	924897	AC008707	41815	1-296
HCUAW03	9290	924897	AC008707	41816	1-677 1113-1549 3480-3944 4020-4165 4927-5522
HCUAP34	9291	706426	AL353716	41817	1-589 685-908
HCUAP34	9291	706426	AL353716	41818	1-296
HCUAN95	9292	796010	AC026334	41819	1-572 866-1959
HCUAN95	9292	796010	AC019249	41820	1-572 866-1959
HCUAN95	9292	796010	AC026334	41821	1-478
HCUAN95	9292	796010	AC019249	41822	1-478
HCUAL33	9296	702677	AC027143	41823	1-96 228-1075 1229-1350 1862-2254 4843-5004 5033-5301 5517-5732 6982-7387 8068-8350
HCUAL33	9296	702677	AC009830	41824	1-59 239-1038
HCUAL33	9296	702677	AL162427	41825	1-96 228-1075 1305-1420 1862-2254 4172-4647 4843-5004 5033-5301

					5517-5732 6982-7387 8068-8350
HCUAL33	9296	702677	AL137067	41826	1-96 228-1075 1862-2254 4172-4647 4843-5004 5033-5301 5517-5732 8068-8350
HCUAL33	9296	702677	AC027143	41827	1-2457 2671-2973 3029-3395 4478-5527
HCUAL33	9296	702677	AC009830	41828	1-122
HCUAL33	9296	702677	AC009830	41829	1-2457 2671-2975 3031-3397 4480-5529
HCUAL33	9296	702677	AL162427	41830	1-2457 2671-2973 3029-3395 4478-5527
HCUAL33	9296	702677	AL137067	41831	1-2457 2671-2973 3029-3395 4478-5527
HCUAG10	9297	968229	AC023329	41832	1-1815
HCUAG10	9297	968229	AC005781	41833	1-1762
HCUAG10	9297	968229	AC023329	41834	1-130
HCUAG10	9297	968229	AC005781	41835	1-497
HCUAG10	9297	968229	AC023329	41836	1-594
HCUAG10	9297	968229	AC005781	41837	1-130
HCUAF80	9298	862171	AC025287	41838	1-271
HCUAF80	9298	862171	AC011934	41839	1-271
HCUAF80	9298	862171	AC025287	41840	1-153
HCUAF80	9298	862171	AC011934	41841	1-92 448-924 975-1831 2255-3125 4256-4623 .4692-4860 4956-5133 5294-5384 6027-6127 6982-7140 7833-7981 8551-8865
HCUAF80	9298	862171	AC011934	41842	1-153
HCUAF01	9299	850153	AC007610	41843	1-402
HCUAF01	9299	850153	AC007597	41844	1-402
HCUAF01	9299	850153	AC007610	41845	1-304
HCUAF01	9299	850153	AC007610	41846	1-236
HCUAF01	9299	850153	AC007597	41847	1-236
HCUAF01	9299	850153	AC007597	41848	1-304
HCFOO25	9302	678200	AC027606	41849	1-632

					1059-1917 2225-2330 2605-3919 4207-4633 4704-5059 5613-5968 6999-7333 7591-7886
HCFOO25	9302	678200	AC068008	41850	1-567 1085-1512 2549-2597 2599-2828 3519-3736 5661-6292 6719-7577 7886-7991 8266-9581
HCFOO25	9302	678200	AL359762	41851	1-555
HCFOO25	9302	678200	AC068008	41852	1-404
HCFOO25	9302	678200	AL359762	41853	1-218
HCFOO01	9303	916687	AC073217	41854	1-799
HCFOO01	9303	916687	AC073217	41855	1-664
HCFON45	9304	850372	AL365228	41856	1-115 527-629 741-1140 2622-3583 3991-4229 4991-5948
HCFON45	9304	850372	AL160291	41857	1-961
HCFON45	9304	850372	AL160291	41858	1-105
HCFON45	9304	850372	AL365228	41859	1-530
HCFOF34	9305	955905	AL353795	41860	1-1476
HCFOF34	9305	955905	AC004472	41861	1-511 725-1358 1371-2631 2712-3213 4100-4503 4587-4770 4808-5212 5835-6000 6587-6723 7277-7601 8372-8506 9066-9684 10294-10443 10505-10671 10981-11097 11489-11657 11712-11975 12060-12370 12847-13177 13448-13606 14394-14908 15130-16605
HCFOF34	9305	955905	AC004472	41862	1-1171 1583-2215 2318-2866

					2918-3060 3218-3349 3450-3598 3737-3890 4135-4250 4291-4358 4565-4859 4999-5043 5226-5438 5656-6488
HCFNQ62	9306	745755	AL161911	41863	1-2195
HCFNQ62	9306	745755	AL354792	41864	1-2462
HCFNQ62	9306	745755	AL161911	41865	1-174
HCFNQ62	9306	745755	AL354792	41866	1-174
HCFNQ62	9306	745755	AL354792	41867	1-532
HCFNP09	9307	961149	AC012286	41868	1-769
HCFNG63	9309	745148	AC022454	41869	1-153
HCFNG63	9309	745148	AC023030	41870	1-154
HCFNG63	9309	745148	AL357568	41871	1-220
HCFNG63	9309	745148	AL356793	41872	1-137
HCFNG63	9309	745148	AL137250	41873	1-163
HCFNG63	9309	745148	AC026620	41874	1-152
HCFNG63	9309	745148	AL136366	41875	1-153
HCFNG63	9309	745148	AC024315	41876	1-220
HCFNG63	9309	745148	AC026620	41877	1-389
HCFNG10	9310	848225	ALI60396	41878	1-986
HCFNG10	9310	848225	AL160396	41879	1-145
HCFNB09	9311	625697	AC007537	41880	1-455 1025-1267
HCFNB09	9311	625697	AC007537	41881	1-76 3894-4156 4349-5038 6089-6266 7321-7627 8176-8922
HCFNB09	9311	625697	AC007537	41882	1-98
HCFNA77	9312	874777	AC068117	41883	1-573 722-891 1721-2054 3412-3716 5986-6569
HCFNA77	9312	874777	AC068117	41884	1-786
HCFNA64	9313	850391	AL365360	41885	1-560 993-1655
HCFNA64	9313	850391	AL353606	41886	1-560 993-1655
HCFNA64	9313	850391	AL365360	41887	1-183
HCFNA64	9313	850391	AL353606	41888	1-1060 3792-4313 4487-5046 5347-5671
HCFNA64	9313	850391	AL353606	41889	1-183
HCFNA21	9314	671021	AL355533	41890	1-305
HCFNA21	9314	671021	AL162725	41891	1-284
HCFNA21	9314	671021	AC021382	41892	1-116
HCFNA21	9314	671021	AC073492	41893	1-284

HCFNA21	9314	671021	AC023226	41894	1-557
					803-1288
					1418-1606
					2471-2523
					3221-3509
					4385-4658
HCFNA21	9314	671021	AL355586	41895	1-252
HCFNA21	9314	671021	AC023999	41896	1-284
HCFNA21	9314	671021	AL162503	41897	1-240
HCFNA21	9314	671021	AC011461	41898	1-300
					335-605
					820-906
					952-1235
HCFNA21	9314	671021	AC005189	41899	1-453
					835-1194
					2102-2218
					2512-2940
					3181-3291
					4157-4623
					4626-4927
					5177-5567
					6898-7486
					8246-8569
					8756-9250
					9481-10247
					11119-12587
HCFNA21	9314	671021	AC004477	41900	1-118
					830-1247
					1753-2044
					3435-3582
					3839-3927
					4483-4574
					5042-5100
					5548-6137
					6371-6614
					7495-7637
					8604-8661
					9274-9310
					9993-10590
					11293-11618
HCFNA21	9314	671021	AL389927	41901	1-240
HCFNA21	9314	671021	AC023226	41902	1-177
HCFNA21	9314	671021	AC023226	41903	1-604
HCFNA21	9314	671021	AL355586	41904	1-303
HCFNA21	9314	671021	AC011461	41905	1-294
HCFNA21	9314	671021	AC011461	41906	1-205
HCFNA21	9314	671021	AC005189	41907	1-902
HCFMZ90	9315	922112	AC024247	41908	1-1246
					1754-2769
					3106-3558
					4431-5316
HCFMW71	9316	920506	AC022536	41909	1-31
					340-421
					1097-1262
					2446-2621
					3069-3161
					3571-3791

					4947-5076 5905-6987
HCFMW71	9316	920506	AC022536	41910	1-102
HCFMU01	9317	916695	AL161779	41911	1-208 855-1115 1208-1348 3620-3704 3856-4332 6287-6407 7167-7351 7450-7631 7731-7880 7976-8113 8467-8612 9195-9349 9454-9557 10254-11220 12199-12327 13403-13543 13962-14149 15654-16061 16517-16664 16756-16817
HCFMU01	9317	916695	AL161779	41912	1-117 164-727 1010-1159 1669-1807
HCFMP46	9318	463278	AC044875	41913	1-1588
HCFMP46	.9318	463278	AC025879	41914	1-1719
HCFMP46	9318	463278	AC044875	41915	1-458
HCFMP46	9318	463278	AC025879	41916	1-457
HCFMO47	9319	881505	AL121753	41917	1-471 638-753 935-1173 1735-2469
HCFMO47	9319	881505	AL356652	41918	1-471 638-753 935-1173 1740-2473
HCFMO47	9319	881505	AL121753	41919	1-231
HCFMO47	9319	881505	AL121753	41920	1-521
HCFMO47	9319	881505	AL356652	41921	1-231
HCFMO47	9319	881505	AL356652	41922	1-521
HCFLY85	9323	909182	AC025845	41923	1-719
HCFLY85	9323	909182	AC025845	41924	1-141
HCFLY53	9324	727465	AL357093	41925	1-619
HCFLY53	9324	727465	AL157736	41926	1-619
HCFLY53	9324	727465	AL357093	41927	1-1013
HCFLY53	9324	727465	AL157736	41928	1-1013
HCFLY08	9325	959620	AC069291	41929	1-1515
HCFLY08	9325	959620	AP000425	41930	1-1504
HCFLY08	9325	959620	AC069291	41931	1-537
HCFLY08	9325	959620	AC069291	41932	1-310
HCFLY08	9325	959620	AP000425	41933	1-463
HCFLY08	9325	959620	AP000425	41934	1-219
HCFLM03	9328	850403	AC008244	41935	1-898

HCFLM03	9328	850403	AC008244	41936	1-152
HCFLM03	9328	850403	AC008244	41937	1-376
HCFLL03	9329	850406	AC018635	41938	1-798 812-4849 5038-5366
HCFLL03	9329	850406	AC018635	41939	1-442
HCFLK10	9330	964792	AC004706	41940	1-94 467-1295 1519-1615 1726-2458 2535-5906 6674-8648 8739-9454 9761-10839
HCFLK10	9330	964792	AC004706	41941	1-256
HCFLK10	9330	964792	AC004706	41942	1-1011 1065-1688
HCFDD43	9332	779327	AC023055	41943	1-319
HCFCV32	9333	850413	AC006967	41944	1-757 1230-1693 4059-4088
HCFCV32	9333	850413	AC006967	41945	1-276
HCFCP77	9334	772256	AP001823	41946	1-404 907-1043 3315-3742 5699-6160 6702-9203
HCFCP77	9334	772256	AC074104	41947	1-1612
HCFCM75	9335	850435	AC022795	41948	1-300
HCFCM75	9335	850435	AC006001	41949	1-1388 1736-4438
HCFCM75	9335	850435	AC006001	41950	1-909
HCFCM75	9335	850435	AC006001	41951	1-327
HCFCG23	9337	850426	AL109934	41952	1-826
HCFBQ30	9341	692787	AC021425	41953	1-1005
HCFBM75	9342	766599	AC019213	41954	1-407
HCFBM75	9342	766599	AC019213	41955	1-407 476-865 964-3416
HCFBM75	9342	766599	AC019213	41956	1-181
HCFBK28	9344	706243	AC064878	41957	1-978
HCFBK28	9344	706243	AL365508	41958	1-870
HCFBK28	9344	706243	AL035593	41959	1-1397
HCFBK04	9345	925601	AC010925	41960	1-156 4205-4368 4904-5180 6117-6214 9515-10379 11791-12520 12824-12968 14091-14414 15766-15963 16365-16846 17644-20656 20715-22870
HCFBK04	9345	925601	AC010925	41961	1-750

HCFBK04	9345	925601	AC010925	41962	1-567
HCFBA94	9347	698647	AC009464	41963	1-720
HCFBA94	9347	698647	AC010172	41964	1-720
HCFBA94	9347	698647	AC009464	41965	1-1268
HCFBA94	9347	698647	AC010172	41966	1-57 76-202 233-1585
HCFBA94	9347	698647	AC009464	41967	1-538 2364-2611 5269-5325 5344-5470 5611-6853
HCFBA94	9347	698647	AC010172	41968	1-1268
HCFAZ12	9348	970609	AC011445	41969	1-651 772-876 1775-2035 2688-3014 3057-3405 6051-6168 6208-6321 6440-6712 7006-7725
HCFAZ12	9348	970609	AC018477	41970	1-327
HCFAZ12	9348	970609	AC011445	41971	1-181
HCFAZ12	9348	970609	AC018477	41972	1-349
HCFAZ07	9349	849823	AC010677	41973	1-363 521-878 1071-1821 2474-3022 4784-5310 7192-7356 8048-10603 10664-12406 16123-16163
HCFAZ07	9349	849823	AC010677	41974	1-129
HCFAZ07	9349	849823	AC010677	41975	1-3759 3832-4850 5115-5215 5388-5868 5912-6111 6444-6729 7194-7302 7361-7484 7621-7838 7997-8843 9153-9720 9873-11596
HCFAF08	9350	959714	AC021183	41976	1-292 506-751 948-1404
HCFAC38	9351	576723	AC020900	41977	1-567
HCFAC38	9351	576723	AC008452	41978	1-568
HBUAG44	9353	716685	AL133215	41979	1-181 1710-1810 2434-2525 4747-4877 5346-5426

					5763-6243 7288-7635 8274-8485 8491-8594 8691-8794 10019-10273 10365-10596 11095-11212 14099-14170 14887-15389 15670-15984 16548-17540 17583-20125 20214-20468 20479-20905
HBUAG44	9353	716685	AL133215	41980	1-934
HBUAG44	9353	716685	AL133215	41981	1-284
HBUAC23	9354	847698	AC021652	41982	1-1008
HBUAC23	9354	847698	AC022194	41983	1-1008
HBUAC23	9354	847698	AC063920	41984	1-1008
HBUAC23	9354	847698	AC069239	41985	1-1012
HBUAC23	9354	847698	AC022194	41986	1-99
HBUAC23	9354	847698	AC063920	41987	1-99
HBUAC23	9354	847698	AC021652	41988	1-99
HBMXS23	9357	675254	AL162417	41989	1-520
HBMXL78	9358	738763	AL356496	41990	1-1987 2075-2631 2807-6024 6888-7507
HBMXL78	9358	738763	AL031847	41991	1-264 2611-4597 4685-5241 5384-8634 9498-10117
HBMXL78	9358	738763	AL356496	41992	1-428
HBMXL78	9358	738763	AL031847	41993	1-150
HBMXL78	9358	738763	AL031847	41994	1-428
HBMXL41	9359	711608	AC020602	41995	1-56 2435-3236 3394-3714 4177-4642 5582-5938
HBMXL41	9359	711608	AC020602	41996	1-186
HBMXJ70	9360	757328	AC016742	41997	1-67 1305-1502 3956-4064 4154-4249 6684-6721 6805-6853 6957-7728 7824-8150
HBMXJ70	9360	757328	AC016742	41998	1-695
HBMXF73	9362	764551	AC022795	41999	1-486 890-1214
HBMXF73	9362	764551	AC036178	42000	1-486
HBMXF73	9362	764551	AC022795	42001	1-319
HBMXF73	9362	764551	AC022795	42002	1-644

HBMXF73	9362	764551	AC036178	42003	1-105
HBMWK06	9366	936088	AC009365	42004	1-802
HBMWK06	9366	936088	AC009365	42005	1-741
HBMWK06	9366	936088	AC009365	42006	1-620
HBMWI28	9367	685443	AC010413	42007	1-394
HBMWI28	9367	685443	AC016549	42008	1-399
HBMWI28	9367	685443	AC016654	42009	1-395
HBMWI28	9367	685443	AC016549	42010	1-445
HBMWE35	9368	706034	AC027220	42011	1-642
HBMWE35	9368	706034	AC011939	42012	1-642
HBMWE35	9368	706034	AC027220	42013	1-445 541-1371
HBMWE35	9368	706034	AC011939	42014	1-445 541-1371
HBMWE35	9368	706034	AC027220	42015	1-1356
HBMWE35	9368	706034	AC011939	42016	1-1356
HBMVQ26	9369	546495	AC025162	42017	1-359
HBMVQ26	9369	546495	AC027529	42018	1-342
HBMVQ26	9369	546495	AC034102	42019	1-342
HBMVQ26	9369	546495	AC025162	42020	1-128
HBMVQ26	9369	546495	AC027529	42021	1-128
HBMVQ26	9369	546495	AC034102	42022	1-117
HBMVQ26	9369	546495	AC025162	42023	1-117
HBMVQ26	9369	546495	AC027529	42024	1-117
HBMVQ26	9369	546495	AC034102	42025	1-128
HBMVO41	9370	712565	AC023101	42026	1-438 1253-1723
HBMVO41	9370	712565	AC005007	42027	1-438 1253-1723
HBMVO41	9370	712565	AC023101	42028	1-314
HBMVO41	9370	712565	AC005007	42029	1-311
HBMVI33	9371	702683	AL365356	42030	1-566
HBMVI33	9371	702683	AL365356	42031	1-332
HBMVI33	9371	702683	AL365356	42032	1-527
HBMVG85	9372	575418	AC016994	42033	1-2035 2235-2890
HBMVG85	9372	575418	AC016994	42034	1-185
HBMVG18	9373	666855	AC073850	42035	1-1677
HBMVG18	9373	666855	AL355313	42036	1-1201
HBMVG18	9373	666855	AC073850	42037	1-361 365-659 1340-1630 5013-5171 5305-6231 6951-7130 8361-8461 10060-10446 10887-11394 11879-11990 12915-13089 13910-13985 14157-14484 14912-15130 15858-16001 16731-16805 17316-17370

					17384-17599
					17941-18809
					19405-19751
					19803-20332
					20345-21838
					21893-21955
					22128-23241
HBMVG18	9373	666855	AL355313	42038	1-300
HBMVG18	9373	666855	AC073850	42039	1-300
HBMVD05	9375	932441	AC006947	42040	1-356
HBMVD05	9375	932441	AC006947	42041	1-588
HBMUW96	9376	574517	AL078644	42042	1-371
					561-1011
					1249-1857
					2656-2908
					6001-6230
					6879-6997
					7811-7947
					8148-8324
					8452-8523
					9369-9565
					9659-9836
					10184-10314
					10698-11355
					11652-12814
					13105-13769
					14310-14546
					14683-15524
					15527-15936
					16074-16355
					16764-17327
					17442-17646
					17958-18217
					18401-18986
					19029-19408
HBMUW96	9376	574517	AL356273	42043	1-166
					514-644
					1028-1685
					1982-3144
					3435-4099
					4640-4876
					5013-5854
					5857-6266
					6404-6685
					7094-7657
					7772-7976
					8288-8547
					8731-9316
					9327-11445
HBMUW96	9376	574517	AL078644	42044	1-428
HBMUW96	9376	574517	AL356273	42045	1-535
HBMUW96	9376	574517	AL356273	42046	1-197
HBMUW85	9377	783416	AL117209	42047	1-2275
HBMUW85	9377	783416	AL117209	42048	1-684
HBMUW58	9378	574513	AC007539	42049	1-241
HBMUW58	9378	574513	AC006560	42050	1-241
HBMUW58	9378	574513	AC007539	42051	1-194

HBMUW58	9378	574513	AC006560	42052	1-194
HBMUN03	9379	847787	AC074201	42053	1-373
HBMUN03	9379	847787	AC074201	42054	1-441
HBMUG59	9381	739509	AC016680	42055	1-411 490-1085 1238-1823 1847-3151 3337-3819 4043-5114 5120-6371 6390-6717 6844-7488
HBMUG59	9381	739509	AC023890	42056	1-411 490-1085 1238-1823 1847-3151 3337-3819 4043-5114 5120-6371 6390-6717 6844-7488
HBMUG59	9381	739509	AC016680	42057	1-441
HBMUG59	9381	739509	AC023890	42058	1-441
HBMTS23	9386	676310	AC067737	42059	1-395
HBMTS23	9386	676310	AL008726	42060	1-128 369-1330 2428-2475 2477-2708 3566-4065 4902-5161 5321-5361 5452-5677 5727-5924 6096-6204 6338-6675 6726-9997 10021-10615 11350-11441 11903-12143 14076-14381 14418-15321 16488-16885 17242-18034 19610-20177 20388-20418 20437-20628 21348-21482 21831-21941 23215-23580
HBMTS23	9386	676310	AL008726	42061	1-672
HBMTR29	9387	847785	AC008763	42062	1-79 146-630 893-1147 1256-1307 1396-1511 1831-1889 1999-2740

HBMTR29	9387	847785	AC008763	42063	1-32 34-203 844-2015
HBMTM67	9388	751907	AL031681	42064	1-556
HBMTD69	9389	754179	AL356599	42065	1-602
HBMTD69	9389	754179	AL356599	42066	1-568
HBMSX83	9392	863883	AL365181	42067	1-116 239-331 755-1394
HBMSX83	9392	863883	AL139412	42068	1-44 523-641 764-856 1280-1920
HBMSX83	9392	863883	AL365181	42069	1-472
HBMSX83	9392	863883	AL139412	42070	1-472
HBMDS02	9393	920096	AC024242	42071	1-1429
HBMDS02	9393	920096	AF214633	42072	1-1214
HBMDS02	9393	920096	AC024242	42073	1-1850
HBMDS02	9393	920096	AC024242	42074	1-87
HBMDS02	9393	920096	AF214633	42075	1-87
HBMDS02	9393	920096	AF214633	42076	1-1621
HBMDN16	9394	661947	AC078846	42077	1-509
HBMDN16	9394	661947	AC078846	42078	1-706
HBMDM25	9395	678127	AC009554	42079	1-555 656-1378
HBMDM25	9395	678127	AC009554	42080	1-600
HBMDM25	9395	678127	AC009554	42081	1-342
HBMDL27	9396	683427	AC026281	42082	1-551
HBMDL27	9396	683427	AC026281	42083	1-551
HBMDD72	9398	879813	AC034220	42084	1-327
HBMDD72	9398	879813	AC034220	42085	1-329
HBMDD72	9398	879813	AC034220	42086	1-324
HBMCT09	9401	625627	AC011364	42087	1-1293
HBMCT09	9401	625627	AC011364	42088	1-604
HBMCT09	9401	625627	AC011364	42089	1-88 2280-2404 3673-4027 4896-5794 6706-7138 7773-7935 7953-8728
HBMCS55	9403	731802	AL162729	42090	1-236 534-1144
HBMCS55·	9403	731802	AL353748	42091	1-236 534-1144
HBMCS55	9403	731802	AL353748	42092	1-695
HBMCR25	9404	678164	AC018924	42093	1-1274
HBMCF20	9407	646279	AC025220	42094	1-693 2715-2835
HBMBX72	9409	911168	AC022032	42095	1-146
HBMBX72	9409	911168	AC012342	42096	1-147
HBMBX72	9409	911168	AC015734	42097	1-137
HBMBX72	9409	911168	AC006995	42098	1-971
HBMBX72	9409	911168	AC005080	42099	1-971
HBMBX72	9409	911168	AC004878	42100	1-971
HBMBX72	9409	911168	AC004166	42101	1-771

					810-1009
HBMBX72	9409	911168	AC012342	42102	1-322 346-758
HBMBX72	9409	911168	AC006995	42103	1-1186
HBMBX72	9409	911168	AC006995	42104	1-277
HBMBX72	9409	911168	AC005080	42105	1-1186
HBMBX72	9409	911168	AC005080	42106	1-277
HBMBX72	9409	911168	AC004878	42107	1-1186
HBMBX72	9409	911168	AC004878	42108	1-277
HBMBX72	9409	911168	AC004166	42109	1-1186
HBMBX72	9409	911168	AC004166	42110	1-277
HBMBX64	9410	746633	AC011978	42111	1-596
HBMBX64	9410	746633	AC011978	42112	1-401
HBMBX64	9410	746633	AC011978	42113	1-285
HBMBX55	9411	668981	AC015841	42114	1-152 479-517 726-3565
HBMBX55	9411	668981	AC004586	42115	1-152 479-517 726-3565
HBMBX55	9411	668981	AC018617	42116	1-113 892-1070 1396-1435 1644-4483
HBMBX55	9411	668981	AC015841	42117	1-415
HBMBX55	9411	668981	AC004586	42118	1-126
HBMBX55	9411	668981	AC004586	42119	1-415
HBMBX55	9411	668981	AC018617	42120	1-142
HBMBX55	9411	668981	AC018617	42121	1-415
HBMBU52	9412	973805	AL078592	42122	1-337 551-1205 1693-1794 1828-1926 4581-4678
HBMBU52	9412	973805	AL078592	42123	1-660
HBMBN85	9413	783520	AL356235	42124	1-303
HBMBN85	9413	783520	Z84487	42125	1-303
HBMBN85	9413	783520	AL356235	42126	1-121
HBMBN85	9413	783520	Z84487	42127	1-146
HBMBI49	9414	723094	AC019290	42128	1-533
HBMBI49	9414	723094	AP002373	42129	1-190 530-1839 2021-2072 2082-2679
HBMBI49	9414	723094	AP001149	42130	1-190 530-1839 2021-2072 2082-2682
HBMBI49	9414	723094	AC019290	42131	1-537
HBMBI49	9414	723094	AP001149	42132	1-143
HBMBF78	9416	623421	AC023818	42133	1-1283
HBMBF78	9416	623421	AC023818	42134	1-247
HBMBB57	9419	734915	AL157705	42135	1-327
HBMBB45	9420	578817	AC022417	42136	1-104 339-571 4377-4519

					6781-6868
HBMBB45	9420	578817	AC022417	42137	1-610
HBMAC54	9421	930481	AL138721	42138	1-437
HBMAC54	9421	930481	AC069587	42139	1-437
HBMAC54	9421	930481	AL138721	42140	1-1145
HBMAC54	9421	930481	AC069587	42141	1-1145
HBJNC01	9422	915970	AC026172	42142	1-608
HBJNC01	9422	915970	AC023058	42143	1-610
HBJNC01	9422	915970	AC024056	42144	1-608
HBJNC01	9422	915970	AC018506	42145	1-590 841-1404 1569-1630 3507-3624 5344-5700 5921-6112 6791-7053 7442-8012 8491-9098 9471-9927 10948-11053 11380-11589 11740-12120 12368-12671 12827-13009 13622-13925 13932-14299 14680-15114 15978-16503 16708-18163 18604-18952 19022-19569 20408-20515 22146-22813
HBJNC01	9422	915970	AC023058	42146	1-571
HBJNC01	9422	915970	AC026172	42147	1-571
HBJNC01	9422	915970	AC023058	42148	1-457
HBJNC01	9422	915970	AC024056	42149	1-457
HBJNC01	9422	915970	AC024056	42150	1-571
HBJNC01	9422	915970	AC018506	42151	1-454
HBJNC01	9422	915970	AC018506	42152	1-307
HBJNB52	9423	726475	AC012659	42153	1-809
HBJNB52	9423	726475	AJ132410	42154	1-810
HBJNB52	9423	726475	AC012659	42155	1-186
HBJNB52	9423	726475	AC012659	42156	1-352 365-468
HBJNB52	9423	726475	AJ132410	42157	1-115 134-313
HBJNB52	9423	726475	AJ132410	42158	1-352 359-483 487-635 936-1595 1851-1990
HBJMW95	9424	797604	AC013612	42159	1-107 1905-2479 3319-4030
HBJMW03	9425	921996	AL009182	42160	1-1035 1949-2913

					3786-5190
HBJMW03	9425	921996	AL009182	42161	1-1090 1160-1384 1584-2278
HBJMU53	9426	727987	AC016424	42162	1-88 110-1039 1573-1895 2720-3338 3346-4689 5301-6550 6924-8253
HBJMU53	9426	727987	AC016745	42163	1-1249 1329-2183
HBJMU53	9426	727987	AC016767	42164	1-1248
HBJMU53	9426	727987	AC021029	42165	1-1346 1945-3190 3554-5341
HBJMU53	9426	727987	AL353608	42166	1-32 114-201 331-786 1534-1594 1754-2245 2419-3108 3347-4044 5066-5109 5525-5608 6815-6902 6924-7846 8266-8704 9530-10145 10167-11507 12121-13371 13745-15536
HBJMU53	9426	727987	AL356244	42167	1-995
HBJMU53	9426	727987	AC021035	42168	1-1335 1945-3190 3554-5341
HBJMU53	9426	727987	AC016767	42169	1-344 1339-1560 1569-2898
HBJMU53	9426	727987	AC021029	42170	1-222
HBJMU53	9426	727987	AL353608	42171	1-4819
HBJMU53	9426	727987	AC016745	42172	1-32 114-201 329-784 1753-2244 2418-3106 3345-4041 5062-5105 5507-5590 6794-6883 6903-7834 8252-8690 9516-10133 10139-11484
HBJMU53	9426	727987	AL353608	42173	1-484 929-1087

					2030-2269
HBJMU53	9426	727987	AL356244	42174	1-32 335-790 1758-2250 2424-3112 3351-4048 5072-5119 5513-5596 6801-6890 6910-7835 8255-8693 9519-10136 10141-11497
HBJMU53	9426	727987	AC021035	42175	1-32 1759-2250 2424-3113 3349-4046 5068-5111 5509-5592 6796-6883 6905-7825 8359-8681 9507-10122
HBJMU53	9426	727987	AC021035	42176	1-5381 5404-6543
HBJMS40	9427	710880	AC022252	42177	1-1002
HBJMS40	9427	710880	AL365360	42178	1-1002
HBJMS40	9427	710880	AL353606	42179	1-1002
HBJMS40	9427	710880	AC022252	42180	1-383 389-464
HBJMS40	9427	710880	AL365360	42181	1-383 389-464 712-1179
HBJMS40	9427	710880	AL353606	42182	1-496
HBJMR59	9428	738615	AC011845	42183	1-805
HBJMR59	9428	738615	AL161454	42184	1-804
HBJMR59	9428	738615	AC011845	42185	1-277
HBJML90	9429	787320	AL365321	42186	1-705
HBJML80	9430	775435	AP001384	42187	1-1801
HBJML80	9430	775435	AP000666	42188	1-1801
HBJML80	9430	775435	AP001163	42189	1-1802
HBJML80	9430	775435	AP000674	42190	1-1798
HBJML80	9430	775435	AC009544	42191	1-1805
HBJML80	9430	775435	AP001924	42192	1-1801
HBJML80	9430	775435	AP001359	42193	1-1808
HBJML80	9430	775435	AP001384	42194	1-460
HBJML80	9430	775435	AP000666	42195	1-1179
HBJML80	9430	775435	AP001163	42196	1-1179
HBJML80	9430	775435	AP000674	42197	1-1179
HBJML80	9430	775435	AC009544	42198	1-1179
HBJML80	9430	775435	AP001924	42199	1-1175
HBJML80	9430	775435	AP001359	42200	1-460
HBJMC69	9432	754875	AC008870	42201	1-839 931-1233 1620-2006
HBJMC69	9432	754875	AC009043	42202	1-839

					915-1217 1604-1990
HBJMC69	9432	754875	AC002400	42203	1-806 915-1217 1604-1990
HBJMC69	9432	754875	AC008870	42204	1-766
HBJMC69	9432	754875	AC008870	42205	1-255 305-858 1125-1631
HBJMC69	9432	754875	AC009043	42206	1-765
HBJMC69	9432	754875	AC009043	42207	1-255 305-858 1126-1632
HBJMC69	9432	754875	AC002400	42208	1-765
HBJMC69	9432	754875	AC002400	42209	1-255 305-858 1126-1632
HBJLX09	9434	625319	AF178030	42210	1-443
HBJLX09	9434	625319	AF178030	42211	1-353
HBJLX09	9434	625319	AF178030	42212	1-535 4407-4904 6118-6254
HBJLW74	9435	765352	AL359759	42213	1-243 301-731 734-1050 1294-2487 2571-2868 2958-3035 3315-3744
HBJLW74	9435	765352	AL133352	42214	1-243 301-731 734-1050 1294-2487 2569-2761 2959-3036 3316-4415
HBJLW74	9435	765352	AL133352	42215	1-654
HBJLU36	9436	847851	AC027397	42216	1-378 572-919
HBJLU36	9436	847851	AL357120	42217	1-440 634-981
HBJLF04	9439	614915	AL161772	42218	1-690
HBJLF04	9439	614915	AC018392	42219	1-437
HBJLF04	9439	614915	AL161772	42220	1-326
HBJLF04	9439	614915	AC018392	42221	1-186
HBJKI77	9441	772000	AC025928	42222	1-98 345-482 695-1305
HBJKI77	9441	772000	AL109627	42223	1-98 345-482 695-1305
HBJKI77	9441	772000	AL109627	42224	1-651 817-1328 3372-3504
HBJKI77	9441	772000	AL109627	42225	1-348 683-1129 1191-2261

HBJKG07	9442	952843	AC006140	42226	1-1333
HBJKG07	9442	952843	AB023052	42227	1-1333
HBJKG07	9442	952843	AB023052	42228	1-1276 1448-1747 1818-2040 2970-3054 3786-3887 4134-4471 4705-4776 4869-4944 5107-5284 5425-5538 5735-5859 6074-6156 6850-7019 7084-7226 7527-7613 7709-7811 8229-8354 8910-9026 9067-9372 10897-11013 11038-11617 12838-12948 13033-13068 13214-13346 13505-13599 13962-14009 19853-19942
HBJKG07	9442	952843	AC006140	42229	1-171
HBJKG07	9442	952843	AB023052	42230	1-232 2355-2452 3276-3410 3465-3671 3707-4026
HBJKD77	9444	771975	AC069004	42231	1-384
HBJKD77	9444	771975	AC069004	42232	1-147
HBJKD77	9444	771975	AC069004	42233	1-301
HBJKD64	9445	746398	AC008026	42234	1-331
HBJKD64	9445	746398	AC018636	42235	1-331
HBJKD64	9445	746398	AC008026	42236	1-271
HBJKD64	9445	746398	AC018636	42237	1-88
HBJKD60	9446	740171	AC021110	42238	1-817
HBJKD60	9446	740171	AC021110	42239	1-344
HBJKD40	9449	710931	AC025349	42240	1-401
HBJKA77	9450	771982	AP001089	42241	1-2583
HBJKA77	9450	771982	AP001089	42242	1-343
HBJKA01	9451	916077	AC048363	42243	1-536
HBJKA01	9451	916077	AC036144	42244	1-542
HBJKA01	9451	916077	AC016031	42245	1-542
HBJKA01	9451	916077	AC009941	42246	1-542
HBJKA01	9451	916077	AC036144	42247	1-440
HBJKA01	9451	916077	AC016031	42248	1-431 947-1387
HBJKA01	9451	916077	AC048363	42249	1-407
HBJKA01	9451	916077	AC009941	42250	1-431 947-1387

HBJKA01	9451	916077	AC036144	42251	1-407
HBJKA01	9451	916077	AC016031	42252	1-407
HBJKA01	9451	916077	AC009941	42253	1-411
HBJJX53	9452	835733	AC005073	42254	1-447
					940-1180
					1852-2062
					2064-2154
					2609-2977
					3455-4244
					4796-5220
					6485-6924
					8360-8685
					8734-9287
					9704-10448
					11084-12000
					12226-13392
					13703-13772
					13805-14443
					14470-14888
					15137-16367
					16448-17023
					17096-17156
					17259-18000
					18350-18690
					18962-19128
					19420-19573
					19792-20077
					20124-22431
					22573-23150
					23223-23837
					24074-24172
					24218-24750
					24811-25121
					26008-27281
					27312-27680
					27891-28841
					29378-29581
					31206-31718
HBJJX53	9452	835733	AC005071	42255	1-447
					1852-2062
					2064-2154
					2609-2977
					3455-4244
					4796-5218
					6593-6924
					9903-10133
					11084-12000
					12226-13392
					13703-13772
					13805-14443
					14470-14888
					15137-16367
					16448-17010
					17096-17156
					17259-18000
					18350-18690
					18962-19128

					19420-19573 19792-20077 20124-22431 22573-23150 23223-23837 24074-24172 24218-24750 24819-25110 26008-27281 27312-27680 27891-28841 29378-29581 31206-31718
HBJJX53	9452	835733	AC005073	42256	1-853
HBJJX53	9452	835733	AC005073	42257	1-3333 3556-3754 3816-7381 7384-7601 7635-8330 8572-8879 8917-9030 9088-9191 9671-9908 9911-13281 13403-13828 14157-15040 15737-16040 16205-16293 17878-18795 19197-19455 19962-21676
HBJJX53	9452	835733	AC005071	42258	1-3015 3238-3428 3498-7063 7066-7283 7317-8012 9349-12963 13085-13595 13839-14722 15397-15722 15887-15975 17560-18477 18879-19130 19644-21358
HBJJX53	9452	835733	AC005071	42259	1-1300
HBJJT12	9453	894345	AC041015	42260	1-581
HBJJN02	9454	919371	AL138790	42261	1-625
HBJJN02	9454	919371	AC025412	42262	1-625
HBJJN02	9454	919371	AL138790	42263	1-467
HBJJN02	9454	919371	AC025412	42264	1-467
HBJJL10	9455	937583	AC013322	42265	1-229
HBJJL10	9455	937583	AC006038	42266	1-229
HBJJL10	9455	937583	AC013322	42267	1-204 325-500 3769-4126 4496-4823 6184-6339

					8047-8171 8257-8392 8586-8890 9429-9892 10152-10523
HBJJL10	9455	937583	AC013322	42268	1-459 1050-1149 1250-1887
HBJJL10	9455	937583	AC006038	42269	1-459 1050-1149 1250-1887
HBJJL10	9455	937583	AC006038	42270	1-204 325-500 3769-4126 4496-4823 6184-6339 8047-8171 8257-8392 8587-8890 9429-9892 10152-10523
HBJJE44	9456	716409	AC025233	42271	1-847
HBJJE44	9456	716409	AC015727	42272	1-847
HBJJE44	9456	716409	AC025233	42273	1-326
HBJJE44	9456	716409	AC015727	42274	1-326
HBJJA32	9457	699059	AC007200	42275	1-915
HBJJA32	9457	699059	AC008677	42276	1-915
HBJJA01	9458	916078	AC004982	42277	1-571 908-1006 3730-4329 5315-5994
HBJJA01	9458	916078	AC004982	42278	1-78
HBJJA01	9458	916078	AC004982	42279	1-572 898-1000
HBJIL42	9459	597100	AC060225	42280	1-513
HBJIL42	9459	597100	AC060225	42281	1-507
HBJIF51	9462	725081	AL355874	42282	1-968
HBJIF51	9462	725081	AL355874	42283	1-175
HBJIB69	9464	754891	AC019181	42284	1-494
HBJIB69	9464	754891	AC019181	42285	1-324
HBJIB69	9464	754891	AC019181	42286	1-633
HBJIA80	9465	784267	AC020625	42287	1-1231
HBJHX73	9466	971377	AC078916	42288	1-364
HBJHX73	9466	971377	AC022305	42289	1-686
HBJHX73	9466	971377	AC002518	42290	1-247
HBJHX73	9466	971377	AC072032	42291	1-364
HBJHX73	9466	971377	AC027628	42292	1-227 5256-5433 8919-9046
HBJHX73	9466	971377	AC078916	42293	1-288
HBJHX73	9466	971377	AC072032	42294	1-288
HBJHX73	9466	971377	AC027628	42295	1-633
HBJHU20	9468	907575	AC021916	42296	1-684
HBJHU20	9468	907575	AC021916	42297	1-106
HBJHG02	9471	919450	AL137780	42298	1-193 402-1057

HBJHG02	9471	919450	AL137780	42299	1-29 2094-2219 3256-3655 3828-3971
HBJGT03	9472	923800	AC007682	42300	1-972
HBJGT03	9472	923800	AC007682	42301	1-442
HBJFP08	9476	959868	AC018647	42302	1-486
HBJFP08	9476	959868	AC018647	42303	1-2629
HBJFP08	9476	959868	AC018647	42304	1-913 1236-1353
HBJFK85	9477	783432	AC021237	42305	1-534
HBJFK85	9477	783432	AF286886	42306	1-534
HBJFK85	9477	783432	AC021237	42307	1-588
HBJFK85	9477	783432	AF286886	42308	1-588
HBJFI30	9479	691056	AC022307	42309	1-431 761-1608
HBJFI30	9479	691056	AL121991	42310	1-431 761-1379
HBJFI30	9479	691056	AL121991	42311	1-502 1464-1497
HBJFI30	9479	691056	AC022307	42312	1-113
HBJFH60	9480	740543	AL161430	42313	1-878
HBJFH60	9480	740543	AC025797	42314	1-878
HBJFB10	9485	968162	AC025373	42315	1-530 672-1103
HBJFB10	9485	968162	AL035086	42316	1-530 672-1103
HBJFB10	9485	968162	AL035086	42317	1-326
HBJEY89	9486	787044	AC009407	42318	1-173 192-682 737-860 878-1484 1532-1734 2293-2614 3623-3685 3724-3951 4534-4687 6253-6977 7643-8275 8478-8698 8728-9385 10226-10382 10391-11655
HBJEY89	9486	787044	AC009407	42319	1-417
HBJEY89	9486	787044	AC009407	42320	1-256
HBJEP70	9488	757374	AP000936	42321	1-490 646-1111
HBJEP70	9488	757374	AP000936	42322	1-123
HBJEP70	9488	757374	AP000936	42323	1-238
HBJEN68	9489	752251	AC008074	42324	1-1875 4501-4609 9122-9517 9821-10180 11473-11810 13086-13423 13817-13972

					16086-16191
					17570-17697
					18102-18159
					19597-20015
					20772-21637
					24906-25264
					25386-25519
					25609-26886
					28309-29235
					29565-29754
					30942-31809
					33073-33638
					33903-33931
					37395-37804
					37917-38323
					39815-41488
HBJEN68	9489	752251	AC008074	42325	1-497
HBJEN68	9489	752251	AC008074	42326	1-511
HBJEM45	9490	722107	AP001566	42327	1-313
					2488-2927
					4235-4659
					6815-7337
					7823-8134
					8572-8674
					8992-9186
					11601-11987
					12023-12228
					12403-12783
					12851-12918
					13677-14312
HBJEM45	9490	722107	AP002415	42328	1-313
					2488-2927
					4235-4659
					6815-7337
					7823-8134
					8572-8674
					8992-9186
					11600-11986
					12022-12227
					12402-12756
					12860-12927
					13686-14321
HBJEM45	9490	722107	AC011930	42329	1-313
					2489-2928
					4236-4660
					6816-7338
					7824-8135
					8573-8675
					8993-9187
					11602-11988
					12024-12229
					12404-12784
					12852-12919
					13678-14313
HBJEM45	9490	722107	AC019021	42330	1-313
HBJEM45	9490	722107	AC011930	42331	1-542
HBJEM45	9490	722107	AC019021	42332	1-542

HBJEL04	9491	615515	AL158823	42333	1-490 635-1507
HBJEL04	9491	615515	AL137012	42334	1-299 1007-1496 1641-2513 2530-3069 5465-6708
HBJEL04	9491	615515	AL158823	42335	1-540
HBJEL04	9491	615515	AL158823	42336	1-281
HBJEE72	9493	766187	AC078778	42337	1-1093
HBJEE72	9493	766187	AC078778	42338	1-660
HBJED51	9494	485130	AC034222	42339	1-536
HBJED05	9495	935058	AC016073	42340	1-1158
HBJED05	9495	935058	AL121890	42341	1-2064 6702-6829 8712-8859 9331-9803 9843-9964 11575-11689 11970-12122 12288-12322 12353-13049 13111-13608
HBJED05	9495	935058	AL121890	42342	1-244
HBJED05	9495	935058	AL121890	42343	1-945
HBJEA73	9497	573834	AF205589	42344	1-32 110-254 333-849 918-999 1069-1147 1231-1322 1435-1687 1765-1881 1958-2357 2441-3044 3104-3153 3226-3549 3626-3791 3874-4018 4089-4184 4258-4377 4424-5493 5591-5736 5834-5922 6196-6415 6479-6654 6735-6895 7030-7124 7229-7371 7452-7567 7707-7796 7887-7969 8059-8133 8149-8306 8381-8736
HBJEA73	9497	573834	AC022505	42345	1-32 110-254

					341-712 761-844 919-1000 1070-1148 1232-1323 1421-1673 1751-1867 1944-2343 2430-2570
HBJEA54	9498	625943	AL157408	42346	1-516
HBJEA54	9498	625943	AL157408	42347	1-246
HBJEA54	9498	625943	AL157408	42348	1-959
HBJEA38	9499	577103	AC009790	42349	1-616
HBJEA38	9499	577103	AC009790	42350	1-154
HBJEA13	9501	419107	AC061988	42351	1-242
HBJDZ49	9502	847928	AC026507	42352	1-488
HBJDZ49	9502	847928	AC073967	42353	1-488
HBJDZ49	9502	847928	AC007000	42354	1-1192 1740-1980 2324-3297 4882-4969 5136-5436 6223-6476 6487-7106 7435-7855 7977-12142 12173-12247
HBJDZ49	9502	847928	AC006995	42355	1-980 2557-2643 2810-3110 4188-4795 5124-5544 6044-9040 9046-9283 9772-9989 10403-10592 10615-10861 10925-13963 14262-14983
HBJDZ49	9502	847928	AC006014	42356	1-1533 2260-2403 2894-3811 5391-5478 5645-5945 7052-7659 7903-8408 8681-9613 10033-11894 13474-17953 17961-21161 21163-21418 21506-23629 23876-25000 25330-25629 25806-26108 26527-26741 27724-27832

					27877-28134
					28505-29118
					29179-29698
					30220-30471
					30918-31476
					33359-33446
					33613-33723
					34757-35010
					35021-35442
					37343-39068
HBJDZ49	9502	847928	AC007003	42357	1-539
					783-1288
					1410-5415
					5538-5768
					5818-6125
					6276-6341
					6363-10846
					10854-14320
					14396-16493
					16760-17881
					18212-18511
					18545-18951
					19370-19584
					20384-20991
HBJDZ49	9502	847928	AC073517	42358	1-91
					259-371
					1391-1642
					1665-1907
					2614-3019
					3029-3131
					3161-3688
					3727-5211
HBJDZ49	9502	847928	AC004878	42359	1-980
					2557-2644
					2811-3111
					4255-4862
					5191-5611
					5884-9106
					9112-9349
					9832-10053
					10126-10433
					10467-10656
					10679-11417
					11461-15048
					15173-18370
					18955-20842
					21089-22211
					23017-23232
					25096-25345
					25716-26329
					26453-26909
					28140-28698
					30582-30669
					30836-31136
					32001-32686
					34133-34567
					35036-37131

					37137-37181 38806-42375 42420-43181 43189-43972 44198-45300
HBJDZ49	9502	847928	AC004980	42360	1-517 1224-1740 1770-2298 2337-6170 6407-6441 6816-15196
HBJDZ49	9502	847928	AC005073	42361	1-1715 2222-2480 2882-3799 5384-5472 5637-5940 6637-7520 7849-8274 8396-11766 11769-12006 12486-12589 12647-12760 12798-13105 13347-14042 14076-14293 14296-17861 17923-18121 18344-21676
HBJDZ49	9502	847928	AC018720	42362	1-88 295-1846 3509-3598 3764-4061 4797-5399 6020-6423 6565-7094 7133-10962 11199-11233 11406-16414 16433-20188
HBJDZ49	9502	847928	AC006480	42363	1-824 1727-2250 3167-3348 3382-3733 4181-4664 4957-5496 5585-5810 5829-6140 6329-6722 7752-8250 9690-10562 10591-11432 12438-12751 14763-15319 15478-15667 16874-16955 20911-21344 21469-21617

					22041-22247 25096-25193 25336-25751 26609-26714 26798-27211 28295-28832 29914-30366 31336-31510 31520-32202 33873-33965 34131-34431 34675-34784 35103-35705 36242-36731 36873-37401 37440-37680 37699-41271 41712-50442
HBJDZ49	9502	847928	AF030453	42364	1-64 232-342 1337-1852 2559-2964 3673-7264 7293-7508 7746-7780 7953-18188
HBJDZ49	9502	847928	AC004867	42365	1-1716 2250-2502 2834-3813 5396-5483 5650-5950 6624-7332 7837-8257 8379-11753 11756-12384 12781-13088 13239-13304 13326-17824 17886-18086 18320-21988 22072-23613
HBJDZ49	9502	847928	AC005088	42366	1-91 259-371 1378-1894 2601-3006 3715-7552 7788-7822 7995-12991 13010-18252
HBJDZ49	9502	847928	AC005488	42367	1-1525 2823-3802 5381-5467 5634-5934 7010-7619 7948-8368 8868-11864 11870-12107

					12594-12811 12884-13191 13225-13414 13437-14521 14529-17110 17190-17916 17924-21107 21551-23569 23842-24790 25294-25593 25666-26072 27692-27800 27845-28102 28538-29666 30322-30463 30913-31471 33356-33443 33610-33910 34799-35052 35063-35484 36553-37367 38056-39110
HBJDZ49	9502	847928	AC005098	42368	1-1716 2360-2501 2897-3814 5395-5482 5649-5949 6624-7332 7837-8257 8530-11755 11758-12386 12495-12713 12792-13099 13250-13315 13337-17835 17902-18103 18336-22003 22097-24218
HBJDZ49	9502	847928	AC004166	42369	1-1716 2357-2498 2831-3810 5393-5480 5647-5947 6621-7329 7834-8254 8376-11750 11753-12381 12778-13085 13236-13301 13323-16669 16700-17821 17883-18016 18317-21985 22062-23603
HBJDZ49	9502	847928	AC005071	42370	1-1715 2229-2480 2882-3799

					5384-5472 5637-5962 6637-7520 7764-8274 8396-12010 13347-14042 14076-14293 14296-17861 17931-18121 18344-21358
HBJDZ49	9502	847928	AC061712	42371	1-103 1368-1977 2306-2726 2999-6224 6227-6464 6951-7168 7241-7548 7582-7771 7794-10119
HBJDZ49	9502	847928	AC007000	42372	1-2261 2328-3085 3093-6210 6306-6555 6630-8724 9378-10405 10433-10732 10766-11172 11591-11805 12605-13216
HBJDZ49	9502	847928	AC006995	42373	1-719
HBJDZ49	9502	847928	AC073967	42374	1-528
HBJDZ49	9502	847928	AC006014	42375	1-979
HBJDZ49	9502	847928	AC007003	42376	1-614
HBJDZ49	9502	847928	AC007000	42377	1-35 200-361 374-4630 4674-5056 5071-7020
HBJDZ49	9502	847928	AC073517	42378	1-583
HBJDZ49	9502	847928	AC006995	42379	1-1659
HBJDZ49	9502	847928	AC006014	42380	1-929 1161-4487 4579-5506 5664-5765 5979-9483 10048-10856 11336-11702 12041-12251 12253-12463 13816-13903 13917-14426
HBJDZ49	9502	847928	AC004878	42381	1-255
HBJDZ49	9502	847928	AC004878	42382	1-741 818-1073 1163-3038
HBJDZ49	9502	847928	AC004980	42383	1-293
HBJDZ49	9502	847928	AC004980	42384	1-1417

HBJDZ49	9502	847928	AC005073	42385	1-513
				-	2138-2341
					2878-3828
					4039-4407
					4438-5711
					6598-6908
					6969-7501
					7547-7645
					7882-8496
					8569-9146
					9288-11595
					11642-11927
					12146-12299
					12591-12757
					13029-13369
					13719-14460
					14563-14623
					14696-15271
					15352-16582
					16831-17249
					17276-17914
					17947-18016
					18327-19493
					19719-20635
					21271-22015
					22432-22985
					23034-23359
					24795-25234
					26499-26923
					27475-28264
					28742-29110
					29565-29655
					29657-29867
					30539-30779
					31272-31718
HBJDZ49	9502	847928	AC005073	42386	1-257
HBJDZ49	9502	847928	AC018720	42387	1-1380
HBJDZ49	9502	847928	AC006480	42388	1-1207
HBJDZ49	9502	847928	AC006480	42389	1-327
HBJDZ49	9502	847928	AF030453	42390	1-583
HBJDZ49	9502	847928	AF030453	42391	1-3119
					3130-4112
HBJDZ49	9502	847928	AC004867	42392	1-868
					1145-2855
					2954-4494
					4586-5798
					5910-9476
					10040-10848
					11092-11171
					11330-11695
					12154-12509
					13065-13372
					13935-14448
HBJDZ49	9502	847928	AC004867	42393	1-583
					834-1954
HBJDZ49	9502	847928	AC005088	42394	1-583
HBJDZ49	9502	847928	AC005088	42395	1-3121

					3128-4110
HBJDZ49	9502	847928	AC005488	42396	1-867 1144-2852 2949-4487 4579-5789 5978-9485 10048-10911 11334-11700 12034-12509 13205-13321 13907-14417
HBJDZ49	9502	847928	AC005488	42397	1-735 738-975
HBJDZ49	9502	847928	AC005098	42398	1-866 1143-2850 2949-4489 4581-5793 5905-8184 8255-9460 10026-10834 11078-11157 11307-11672 12131-12486 13183-13299 13912-14426
HBJDZ49	9502	847928	AC005098	42399	1-937
HBJDZ49	9502	847928	AC004166	42400	1-868 1146-2858 2957-4497 4589-5801 5913-9479 10043-10851 11095-11174 11333-11698 12157-12512 13938-14451
HBJDZ49	9502	847928	AC004166	42401	1-583 834-1954
HBJDZ49	9502	847928	AC005071	42402	1-896
HBJDZ49	9502	847928	AC061712	42403	1-1123 1396-3493 3581-3836 3838-7040 7048-8923
HBJDZ49	9502	847928	AC005071	42404	1-513 2138-2341 2878-3828 4039-4407 4438-5711 6609-6900 6969-7501 7547-7645 7882-8496 8569-9146 9288-11595 11642-11927 12146-12299

					12591-12757 13029-13369 13719-14460 14563-14623 14709-15271 15352-16582 16831-17249 17276-17914 17947-18016 18327-19493 19719-20635 21586-21816 24795-25126 26501-26923 27475-28264 28742-29110 29565-29655 29657-29867 31272-31718
HBJDR24	9503	677407	AC009951	42405	1-642
HBJDR24	9503	677407	AC009951	42406	1-327
HBJDR24	9503	677407	AC009951	42407	1-486 993-1122
HBJDQ86	9504	784654	AL133548	42408	1-50 3009-3073 4198-4253 5692-5831 6776-6827 8851-8970 9968-10050 12598-12974 13262-13364 16417-16776 19112-20566
HBJDQ86	9504	784654	AL133548	42409	1-1017
HBJDM70	9505	757435	AC010894	42410	1-380
HBJDM70	9505	757435	AC010894	42411	1-502
HBJDL24	9506	678272	AC008675	42412	1-996
HBJDL24	9506	678272	AC008675	42413	1-300
HBJCQ65	9508	876430	AF192303	42414	1-1230 1271-3810
HBJCJ82	9509	779645	AL161456	42415	1-1118
HBJCJ82	9509	779645	AL158075	42416	1-1523
HBJCJ82	9509	779645	AL158075	42417	1-853 1340-2553
HBJCJ82	9509	779645	AL158075	42418	1-482
HBJCE07	9510	954090	AC025605	42419	1-357 443-919
HBJCE07	9510	954090	AC073101	42420	1-357
HBJCE07	9510	954090	AC025605	42421	1-653
HBJCE07	9510	954090	AC073101	42422	1-233
HBJCE07	9510	954090	AC073101	42423	1-420
HBJBR04	9512	847952	AC005682	42424	1-458
HBJBR04	9512	847952	AC005682	42425	1-373
HBJAP95	9513	796659	AL138715	42426	1-1044
HBJAP95	9513	796659	AL031601	42427	1-590 1338-1600

					2644-3247
HBJAP95	9513	796659	AL138715	42428	1-717
HBJAP95	9513	796659	AL138715	42429	1-265
HBJAP95	9513	796659	AL031601	42430	1-706
HBJAJ49	9515	723164	AC078846	42431	1-416 1103-1882
HBJAJ49	9515	723164	AC078846	42432	1-116
HBJAH27	9517	682941	AC016325	42433	1-69 560-632 2298-2395 2510-2613 3563-3801 5031-5598 5763-5801
HBJAE32	9518	699695	AC044843	42434	1-487 983-1447
HBJAE32	9518	699695	AC008525	42435	1-487 983-1447
HBJAE32	9518	699695	AC008525	42436	1-337
HBJAB49	9520	722195	AF276759	42437	1-1613
HBJAB49	9520	722195	AC019031	42438	1-1613
HBJAB49	9520	722195	AF276759	42439	1-561
HBJAB49	9520	722195	AC019031	42440	1-561
HBJAB28	9521	847966	AC023071	42441	1-736
HBJAB15	9522	660552	AP001931	42442	1-1266
HBJAB15	9522	660552	AP000727	42443	1-1264
HBJAB15	9522	660552	AP001931	42444	1-366
HBJAB15	9522	660552	AP001931	42445	1-308
HBJAB15	9522	660552	AP000727	42446	1-366
HBJAB15	9522	660552	AP000727	42447	1-308
HBDAE47	9523	720008	AL353776	42448	1-1591
HBDAE47	9523	720008	AL353776	42449	1-490
HBDAD16	9525	661560	AC013396	42450	1-1371
HBDAD16	9525	661560	AC013396	42451	1-296
HBDAD16	9525	661560	AC013396	42452	1-204
HBCCO10	9526	963157	AC009634	42453	1-575
HBCCO10	9526	963157	AC011721	42454	1-575
HBCCO10	9526	963157	AC009634	42455	1-206
HBCCO10	9526	963157	AC011721	42456	1-206
HBCCO10	9526	963157	AC011721	42457	1-86
HBCCJ05	9527	930956	AC068322	42458	1-600
HBCCJ05	9527	930956	AC027243	42459	1-600
HBCCJ05	9527	930956	AC024059	42460	1-600
HBCCJ05	9527	930956	AC010868	42461	1-584
HBCCJ05	9527	930956	AC068322	42462	1-424
HBCCJ05	9527	930956	AC027243	42463	1-456
HBCCJ05	9527	930956	AC068322	42464	1-460 1112-1585
HBCCJ05	9527	930956	AC027243	42465	1-460 1112-1585
HBCCJ05	9527	930956	AC024059	42466	1-456
HBCCJ05	9527	930956	AC010868	42467	1-385
HBCCJ05	9527	930956	AC010868	42468	1-335
HBCCD06	9529	938319	AC007783	42469	1-2334 2508-3084 3578-3890

					4198-4294
					4376-4623
					4712-5349
					5369-6088
					6527-7107
					7298-7392
					7730-7846
					9147-9476
					10487-10575
					10791-11298
					11485-11601
					11783-13009
					13207-13501
					13540-13772
					14439-14800
					14923-14983
					15133-15355
					15485-15653
					16750-16805
					16894-17078
					17162-17219
					18003-18089
					21085-21146
					21358-21501
HBCCD06	9529	938319	AC007783	42470	1-308
HBCCD06	9529	938319	AC007783	42471	1-1024
HBCCB51	9530	975256	AL139353	42472	1-71
					265-794
			.		1791-2077
					2409-2656
HBCBN51	9532	952057	AC073846	42473	1-141
					323-951
					1073-1625
					1640-2371
HBCBN51	9532	952057	AC073846	42474	1-285
HBCBF12	9535	969578	AC068735	42475	1-530
HBCBF12	9535	969578	AC021725	42476	1-534
HBCBF12	9535	969578	AL021368	42477	1-382
					762-1102
					1231-1761
HBCBF12	9535	969578	AC068735	42478	1-342
HBCBF12	9535	969578	AC021725	42479	1-342
HBCBF12	9535	969578	AC068735	42480	1-659
HBCBF12	9535	969578	AC021725	42481	1-679
HBCBF12	9535	969578	AL021368	42482	1-664
HBCBF12	9535	969578	AL021368	42483	1-307
HBCBE57	9536	848322	AL031666	42484	1-1235
HBCBE57	9536	848322	AL031666	42485	1-508
HBCBE57	9536	848322	AL031666	42486	1-648
HBCBB22	9537	848325	AC010735	42487	1-900
HBCAT10	9539	968195	AL357521	42488	1-374
HBCAT10	9539	968195	AL021528	42489	1-374
HBCAT10	9539	968195	AL357521	42490	1-689
HBCAT10	9539	968195	AL357521	42491	1-355
HBCAT10	9539	968195	AL021528	42492	1-689
HBCAT10	9539	968195	AL021528	42493	1-355

HBCAS32	9540	699489	AC007101	42494	1-215 867-1214 1226-2260 2359-2415
HBCAQ85	9541	783431	AC019071	42495 .	1-831 1116-1365 1600-1920 2161-2334 2902-3156 3364-3836 4074-4278 4306-4417 4485-4581 4693-4853 4995-5264 5758-5863 6411-6509 6551-6922
HBCAQ85	9541	783431	AC019071	42496	1-412
HASCG58	9543	738423	AC011116	42497	1-869
HASCG58	9543	738423	AC078794	42498	1-870
HASCG58	9543	738423	AC011116	42499	1-971
HASCG58	9543	738423	AC078794	42500	1-623
HASCG58	9543	738423	AC011116	42501	1-623
HASAW90	9544	789112	AC010234	42502	1-2931
HASAW90	9544	789112	AC021464	42503	1-58 332-547 909-1209 2280-2634 3445-3539 4477-4620 7577-10496 12087-13447 13462-15091 15142-16137
HASAW90	9544	789112	AC021464	42504	1-506
HASAC10	9546	968746	AC007677	42505	1-477
HASAC10	9546	968746	AC007677	42506	1-1410

[052]   Table 1B summarizes additional polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID NO:Z), contig sequences (contig identifier (Contig ID:) contig nucleotide sequence identifiers (SEQ ID NO:X)), and genomic sequences (SEQ ID NO:B). The first column provides a unique clone identifier, "Clone ID NO:Z", for a cDNA clone related to each contig sequence. The second column provides the sequence identifier, "SEQ ID NO:X", for each contig sequence. The third column provides a unique contig identifier, "Contig ID:" for each contig sequence. The fourth column, provides a BAC identifier "BAC ID NO:A" for the BAC clone referenced in the corresponding row of the table. The fifth column provides the nucleotide sequence identifier, "SEQ ID NO:B" for a fragment of the BAC clone identified in column four of the corresponding row of the table. The sixth column, "Exon From-To", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:B which delineate certain polynucleotides of the invention that are also exemplary members of polynucleotide sequences that encode polypeptides of the invention (e.g., polypeptides containing amino acid sequences encoded by the polynucleotide sequences delineated in column six, and fragments and variants thereof).

TABLE 2

Clone ID NO:Z	Contig ID:	SEQ ID NO:X	Analysis Method	PFam/NR Description	PFam/NR Accession Number	Score/ Percent Identity	NT From	NT To
HAMHB21	961376	11	HMMER 2.1.1	PFAM: RhoGAP domain	PF00620	100	497	916
HBDAC79	935414	26	HMMER 2.1.1	PFAM: Acyl-CoA dehydrogenase	PF00441	102.6	94	342
			blastx.14	(AL021958) fadE9 [Mycobacterium tuberculosis]	gi|2911026|emb|CAA 17519.1|	62% 51% 64% 35%	94 250 348 6	255 384 422 89
HBJAG72	722723	32	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.32	83	115
HBJGT92	919507	107	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	7.68	377	436
HBJIY20	669519	141	HMMER 2.1.1	PFAM: Orn/Lys/Arg decarboxylase	PF01276	53.1	49	162
HBMBU24	677240	234	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	7.72	139	192
HBMBZ71	880580	238	HMMER 1.8	PFAM: von Willebrand factor type D domain	PF00094	26.52	200	526
HBMDC16	888206	258	blastx.2	Butyrophilin-like protein BUTR-1.	sp|AAF72554|AAF72 554	50%	19	315
HBMUO90	928078	294	blastx.14	Zfp61p [Mus musculus]	gi|887887|gb|AAC52 290.1|	84% 53%	24 154	119 243
HBMXE31	573323	317	HMMER 1.8	PFAM: Gonadotropin-releasing hormones	PF00446	10.78	112	141
HCFCF47	894415	372	HMMER 1.8	PFAM: Eukaryotic protein kinase domain	PF00069	89.54	20	295
HCFCJ21	671028	374	HMMER	PFAM: Core histones	PF00125	12.79	123	188

HCFLE95	945122	391	1.8 blastx.14	H2A, H2B, H3 and H4 p34 protein [Rattus sp.]	gi|53487|dbj|BAA02786.1|	81%	126	191
						100%	236	271
						85%	71	91
HCUAL07	953876	449	blastx.14	(AF079098) arginine-tRNA-protein transferase 1-1p; ATE1-1p [Homo sapiens]	gi|3806094|gb|AAD12366.1|	87%	5	97
HCUBJ11	967484	478	blastx.14	Ps 2=basic proline-rich protein(PRB1L precursor 1 1 [Homo sapiens]	gi|386433|gb|AAB27289.1|	37%	158	63
						53%	62	24
						35%	325	242
						40%	133	59
						28%	158	63
						40%	133	59
						36%	225	160
						36%	225	160
						41%	74	24
						41%	74	24
						32%	325	242
						33%	158	87
						36%	158	93
						36%	183	118
						71%	44	24
						71%	44	24
						35%	74	24
HCUDT65	915742	548	HMMER 2.1.1	PFAM: tRNA synthetases class II (A)	PF01411	35.1	697	930
			blastx.14	ORF YNL040w [Saccharomyces cerevisiae]	gi|1301892|emb|CAA95907.1|	42%	763	972
						52%	658	759
						31%	1153	1293
						42%	1678	1740

Clone	Seq	ID	Method	Description	Accession	Score/%		
						21% / 20%	1009 / 1273	1149 / 1494
HCUEU10	964857	595	HMMER 1.8	PFAM: Bacterial regulatory proteins, luxR family	PF00196	5.43	13	42
HCUGB48	880730	647	HMMER 1.8	PFAM: TNFR/NGFR cysteine-rich region	PF00020	7.99	173	226
HCUGR38	706471	670	HMMER 1.8	PFAM: Alcohol/other dehydrogenases, short chain type	PF00106	73.02	102	284
HCUHM44	615198	702	HMMER 1.8	PFAM: HMG (high mobility group) box	PF00505	4.81	2	73
HCWAK80	702435	748	HMMER 1.8	PFAM: Src homology domain 3	PF00018	3.55	316	387
HCWAR05	932623	759	blastx.14	hypothetical protein [Synechocystis sp.]	gi|1653272|dbj|BAA18187.1|	47% / 46% / 71%	235 / 70 / 321	83 / 32 / 301
HCWBB63	667283	782	HMMER 2.1.1	PFAM: Secretory protein of YscJ/FliF family	PF01514	78.2	45	275
HCWBE76	968515	799	HMMER 1.8	PFAM: Helix-loop-helix DNA-binding domain	PF00010	9.77	13	51
HCWBI37	967717	809	blastx.14	URF (pot. 4.5S protein) [Escherichia coli]	gi|42759|emb|CAA25537.1|	63% / 85% / 60%	9 / 202 / 228	179 / 222 / 257
HCWBI53	934909	810	blastx.14	lepA [Mycobacterium tuberculosis]	gi|1655655|emb|CAB03723.1|	85% / 84%	65 / 9	166 / 65
HCWBI90	921653	812	blastx.14	xylose isomerase [Klebsiella pneumoniae]	gi|43952|emb|CAA43389.1|	59% / 55%	316 / 344	8 / 291
HCWBN06	924638	825	blastx.14	collagen type XVII [Mus musculus]	gi|309183|gb|AAA37443.1|	26% / 46%	153 / 262	266 / 306

HCWBQ03	920886	834	blastx.14	ORF YBR208c [Saccharomyces cerevisiae]	gi|536588|emb|CAA85172.1|	57% 36% 46% 43% 75% 42%	5 75 259 310 337 78	46 140 303 357 360 119
HCWCM65	529230	891	HMMER 1.8	PFAM: AMP-binding enzymes	PF00501	42% 54%	147 3	287 74
HCWCR31	693632	909	HMMER 2.1.1	PFAM: ATP synthase (E/31 kDa) subunit	PF01991	69.62	31	264
HCWDI64	924632	945	blastx.14	tetracycline transporter-like protein [Mus musculus]	gi|2506078|dbj|BAA22622.1|	80	229	381
HCWDJ23	527555	952	HMMER 2.1.1	PFAM: Bacterial extracellular solute-binding proteins, family 3	PF00497	82% 87%	117 73	167 120
HCWDL45	889416	957	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	27.3	25	198
HCWDR01	839104	973	HMMER 1.8	PFAM: ABC transporters	PF00005	4.63	121	168
			blastx.2	(AE000411) putative ATP-binding component of a transport system [Escherichia coli]	gb|AAC76377.1|	62.98	15	179
HCWDV17	974478	993	HMMER 1.8	PFAM: Bacterial regulatory proteins, luxR family	PF00196	69% 44% 51% 41% 81.59	9 18 281 391 416	215 200 373 477 613
HCWDX22	967361	1014	blastx.14	copC peptide	gi|151190|gb|AAA25	79%	365	84

Clone	Num	Method	Seq	Description	Accession	Score		
HCWDX76	932614	blastx.14	1019	[Pseudomonas syringae]	808.1|	81%	423	358
				(AF102543) unknown [Zymomonas mobilis]	gi|4378174|gb|AAD19419.1|	50%	44	232
						58%	9	59
						55%	38	64
HCWED61	971865	blastx.14	1041	gp210 (AA 1-1886) [Rattus norvegicus]	gi|56463|emb|CAA68759.1|	75%	481	212
HCWEG69	948693	HMMER 1.8	1058	PFAM: Zinc-binding metalloprotease domain	PF00099	2.79	57	98
		blastx.14		orf3 [Pseudomonas aeruginosa]	gi|557259|emb|CAA57572.1|	55%	248	45
						87%	56	9
HCWEI19	948690	HMMER 1.8	1066	PFAM: Zinc-binding metalloprotease domain	PF00099	8.6	226	273
		blastx.14		formaldehyde dehydrogenase (glutathione) [Escherichia coli]	gi|887431|emb|CAA52057.1|	75%	300	10
HCWEL01	916972	blastx.14	1086	(AF010496) exonuclease SbcD homolog [Rhodobacter capsulatus]	gi|3128267|gb|AAC16119.1|	39%	34	171
						47%	193	249
HCWEM51	920887	blastx.14	1096	argininosuccinate lyase [Bacillus subtilis]	gi|2635409|emb|CAB14904.1|	54%	365	39
						47%	57	7
HCWEQ14	908245	HMMER 1.8	1105	PFAM: DEAD and DEAH box helicases	PF00270	72.08	37	177
		blastx.14		(AC002985) R27090_2 [Homo sapiens]	gi|2443870|gb|AAB81544.1|	100%	37	177
						66%	5	40
HCWEW45	571355	HMMER 1.8	1116	PFAM: Heat shock hsp90 proteins	PF00183	10.32	37	186
HCWEY34	954142	blastx.14	1125	(AJ000758) precorrin-4 methylase [Bacillus megaterium]	gi|3724045|emb|CAA04314.1|	32%	3	242

HCWFF88	506577	1143	HMMER 1.8	PFAM: Src homology domain 3	PF00018	4.92	140	181
HCWFK57	861907	1149	HMMER 2.1.1	PFAM: RNA polymerase beta subunit	PF00562	36.2	34	270
HCWFT29	690751	1186	HMMER 1.8	PFAM: Helicases conserved C-terminal domain	PF00271	4.51	105	152
HCWFU66	853005	1196	HMMER 2.1.1	PFAM: Aldehyde dehydrogenase family	PF00171	71.4	105	269
HCWGB78	861843	1217	HMMER 2.1.1	PFAM: Ribosomal protein L31	PF01197	50.8	126	236
HCWGE12	967067	1223	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	4.04	214	288
HCWGW12	964088	1262	blastx.14	L-lactate dehydrogenase (EC 1.1.1.27) - Acinetobacter 1	pir|A37334|A37334	73%	137	60
HCWGY90	960159	1288	HMMER 1.8	PFAM: Bacterial regulatory helix-loop-helix proteins, araC family	PF00165	58.7	6	137
			blastx.14	operon regulatory protein [Erwinia carotovora]	gi|148382|gb|AAA24 811.1|	86%	6	158
HCWHB12	970688	1295	blastx.14	Nodulation protein V (EC 2.7.3.-). [Escherichia coli]	gi|1736771|dbj|BAA1 5920.1|	47% 33% 85%	195 59 310	314 211 330
HCWHD07	953384	1305	blastx.14	Isp42p [Saccharomyces cerevisiae]	gi|736300|emb|CAA8 8644.1|	41% 46% 50%	56 298 341	301 393 394
HCWHP74	598510	1334	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.09	68	112

HCWHQ03	924187	blastx.14	(AL049608) extensin-like protein [Arabidopsis thaliana]	gi|4584539|emb|CAB 40769.1|	50%	85	14
					45%	271	206
					35%	209	126
					43%	300	253
					46%	291	247
					85%	238	218
HCWHQ31	574945	HMMER 2.1.1	PFAM: Carbon-nitrogen hydrolase	PF00795	39.4	141	308
HCWHR81	935419	HMMER 2.1.1	PFAM: Ribosomal protein L30p/L7e	PF00327	90.5	107	265
HCWHT59	924105	blastx.14	(AF047828) syringomycin synthetase [Pseudomonas syringae pv. syringae]	gi|3510629|gb|AAC8 0285.1|	57%	261	148
					45%	327	148
					50%	261	148
					50%	261	148
					36%	122	9
					34%	122	9
					61%	329	252
					55%	157	104
					40%	104	9
					33%	107	9
					66%	142	107
					55%	305	252
					26%	249	160
					26%	249	160
					44%	305	252
					41%	157	107
					41%	157	107
					33%	311	249
					22%	107	15
					32%	246	163
HCWKF08	959388	blastx.14	pot. ORF I [Homo	gi|1335196|emb|CAA	57%	83	27

Clone	No.	SEQ	Method	Description	Accession	%		
				sapiens]	26917.1|	62%	303	256
						32%	192	82
						47%	247	179
HCWKN08	959380	1409	blastx.14	CeoB [Burkholderia cepacia]	gi|2109271|gb|AAB58161.1|	55%	249	169
						50%	148	83
						62%	281	258
						54%	61	29
HCWKV68	959801	1427	blastx.14	(AL121600) hypothetical protein SCF76.09 1	gi|6002364|emb|CAB56729.1|	34%	219	142
						42%	120	43
						57%	238	218
HCWLD06	935392	1437	blastx.14	ORF_o485 [Escherichia coli]	gi|887832|gb|AAA83063.1|	47%	240	7
						42%	449	282
						35%	66	7
HCWLE37	960093	1442	blastx.14	(AF039571) peripheral benzodiazepine receptor interacting protein; PBR-IP/PRAX1 [Homo sapiens]	gi|4104812|gb|AAD11957.1|	100%	126	263
						85%	304	345
						87%	103	126
						44%	66	119
						36%	250	315
HCWLH79	959458	1453	blastx.14	(AC004877) sco-spondin-mucin-like; similar to P98167 1 sapiens]	gi|3638957|gb|AAC36301.1|	27%	289	191
						71%	326	306
HCWTB11	965024	1462	blastx.14	DNA primase [Escherichia coli]	gi|147755|gb|AAA24600.1|	45%	341	3
HCWTB56	853009	1470	HMMER 1.8	PFAM: E1-E2 ATPases	PF00122	55.15	2	301
			blastx.2	cadmium resistance protein [Lactococcus lactis]	gb|AAB37345.1|	42%	2	316
HCWTR08	958791	1516	blastx.14	(AE000888) malate dehydrogenase [Methanobacterium]	gi|2622314|gb|AAB85694.1|	43%	66	134
						44%	182	262

HCWTR54	729290	HMMER 1.8	thermoautotrophicum] PFAM: Helicases conserved C-terminal domain	PF00271	6.14	151	198
HCWTS15	654317	HMMER 1.8	PFAM: D-isomer specific 2-hydroxyacid dehydrogenases	PF00389	47.52	2	166
HCWUU16	661570	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.17	33	77
HDDMA83	926991	blastx.14	(AF038963) RNA helicase [Homo sapiens]	gi|4405795|gb|AAD19826.1|	100% 51% 100% 90%	2 537 656 526	514 635 694 558
HDMAQ15	941282	HMMER 2.1.1	PFAM: POT family	PF00854	77.2	811	386
		blastx.2	(AF121080) cAMP inducible 1 protein [Mus musculus]	gb|AAD24570.1|AF1 21080_1	80%	2	997
HDPAG32	947832	HMMER 2.1.1	PFAM: Peptidase family M1	PF01433	39.1	335	577
HDPCN94	794275	HMMER 2.1.1	PFAM: RhoGEF domain	PF00621	54.2	363	740
HDPFF07	974494	blastx.14	(AF151363) Cdc42 GTPase-activating protein [Mus musculus]	gi|5020264|gb|AAD3 8043.1|AF151363_1	92% 96% 50%	513 715 458	716 789 505
HDPIT53	926498	blastx.14	(AF109719) BAT2 [Mus musculus]	gi|3941737|gb|AAC8 2480.1|	50% 30%	229 278	170 219
HDPIT61	741724	blastx.2	(AF121080) cAMP inducible 1 protein [Mus musculus]	gb|AAD24570.1|AF1 21080_1	73% 57%	48 293	329 397

HDPKD52	959653	HMMER 1.8	PFAM: Fibronectin type III domain	PF00041	4.82	340	402
HDPLC45	909091	HMMER 2.1.1	PFAM: BTB/POZ domain	PF00651	39.5	280	507
HDPMA48	582015	blastx.2	(AF038007) FIC1 [Homo sapiens]	gb|AAC63461.1|	54%	152	703
HDPMO62	912722	HMMER 1.8	PFAM: Ras family (contains ATP/GTP binding P-loop)	PF00071	132.39	127	432
		blastx.2	rab-related GTP-binding protein [Homo sapiens]	emb|CAA68227.1|	54% 57%	133 20	444 76
HDPNC96	934520	HMMER 1.8	PFAM: Eukaryotic protein kinase domain	PF00069	206.63	3	734
		blastx.14	HUMAN NDR [unidentified]	gi|2304746|emb|CAA03387.1|	92%	3	734
HDPOJ93	792193	HMMER 1.8	PFAM: EF hand	PF00036	7.78	266	313
HDPPP24	812091	HMMER 2.1.1	PFAM: Fes/CIP4 homology domain	PF00611	22.4	151	387
HDPPU44	951276	HMMER 1.8	PFAM: Lectin C-type domain short and long forms	PF00059	37.49	245	376
HDPRH02	919404	blastx.14	ORF YGR090w [Saccharomyces cerevisiae]	gi|1323133|emb|CAA97093.1|	30% 48%	266 593	451 673
HDPSG10	961323	blastx.14	reverse transcriptase [Homo sapiens]	gi|439877|gb|AAB02291.1|	66% 37% 54%	6 280 235	59 351 267
HDPTW90	722699	HMMER 1.8	PFAM: IG (immunoglobulin)	PF00047	3.32	1	24

			superfamily				
HDPVG11	966556	1877	HMMER 1.8	PFAM: PH (pleckstrin homology) domain	PF00169	16	518	613
HDPWE80	909916	1890	HMMER 2.1.1	PFAM: PH domain	PF00169	81.2	412	708
			blastx.2	(AF102854) membrane-associated guanylate kinase-interacting protein 2 Maguin-2 [Rattus norvegicus]	gb|AAD04568.1|	36%	349	756
HDPWY46	915964	1894	blastx.14	(AF061738) leucine aminopeptidase [Homo sapiens]	gi|4335941|gb|AAD17527.1|	94% 87% 80% 95% 62% 33%	3 316 140 254 425 305	152 438 217 316 472 358
HDQEF04	927024	1914	blastx.14	Bassoon [Mus musculus]	gi|3413810|emb|CAA76598.1|	75%	239	216
HDQGT70	909848	1936	blastx.14	Bat2 [Homo sapiens]	gi|29375|emb|CAA78744.1|	37%	248	201
HDQHT10	963481	1944	blastx.14	(AF039571) peripheral benzodiazepine receptor interacting protein; PBR-IP/PRAX1 [Homo sapiens]	gi|4104812|gb|AAD19571.1|	58% 43% 100% 55% 42% 58% 83%	490 387 76 253 256 45 51	455 319 59 227 215 10 34
HDQHZ10	961336	1945	blastx.14	fractionated X-irradiation-induced 29 thymoma [Mus musculus]	gi|1389694|gb|AAB02905.1|	51% 71%	47 2	256 43
HDQHZ22	879416	1946	blastx.2	cysteine rich hair keratin	emb|CAA56339.1|	40%	65	319

				associated protein [Oryctolagus cuniculus]	42%	65	352
HDTAY23	973925	blastx.14	gi|3800869|gb|AAC6 8900.1|	(AF086624) serine threonine kinase [Rattus norvegicus]	98%	78	254
HDTAY23	974565	blastx.14	gi|3800869|gb|AAC6 8900.1|	(AF086624) serine threonine kinase [Rattus norvegicus]	98% 85% 100% 66%	79 330 371 305	255 371 403 331
HDTBO48	945083	HMMER 1.8	PF00047	PFAM: IG (immunoglobulin) superfamily	18.53	159	347
		blastx	emb|CAA08796.1|	(AJ009698) embigin protein [Rattus norvegicus]	58% 75% 58%	132 273 357	248 356 464
HDTBR50	846630	HMMER 1.8	PF00085	PFAM: Thioredoxins	29.85	163	297
HDTBY88	934472	HMMER 2.1.1	PF00069	PFAM: Eukaryotic protein kinase domain	93.6	3	302
		blastx.14	gi|1517820|gb|AAC5 0918.1|	p56 KKIAMRE protein kinase [Homo sapiens]	82% 35% 100%	3 192 492	170 458 509
HDTDC53	916348	HMMER 1.8	PF00125	PFAM: Core histones H2A, H2B, H3 and H4	7.98	180	233
HDTEI19	912765	blastx.14	gi|919|emb|CAA3980 0.1|	rab4b [Canis familiaris]	78% 88%	244 387	354 413
HDTES50	964709	HMMER 1.8	PF00076	PFAM: RNA recognition motif. (aka RRM, RBD, or RNP domain)	31.58	108	326
		blastx.2	gb|AAA35554.1|	arginine-rich nuclear	65%	36	350

					protein [Homo sapiens]			
HDTHQ15	923899	2009	blastx.14	Similar to a C.elegans protein encoded in cosmid C27F2 (U40419) [Homo sapiens]	gi|1665781|dbj|BAA13387.1|	97%	4	612
HDTHZ46	957669	2012	blastx.14	(AC004877) sco-spondin-mucin-like; similar to P98167 1 sapiens]	gi|3638957|gb|AAC36301.1|	43%	100	168
						42%	45	101
						46%	172	216
						43%	2	49
						40%	5	49
						38%	318	371
HDTID61	908946	2016	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	7.07	407	430
			blastx.2	(AK002053) unnamed protein product [Homo sapiens]	dbj|BAA92059.1|	46%	45	389
						53%	45	341
						50%	33	341
						45%	45	389
						47%	45	344
						49%	48	356
						46%	45	344
						33%	18	674
						42%	18	320
						34%	60	554
						51%	18	245
						57%	347	457
						37%	347	547
						32%	338	553
						50%	374	457
						47%	338	442
						66%	519	554
HDTIF01	883070	2017	blastx.2	(AF010144) neuronal	gb|AAC08737.1|	61%	315	524

HDTIZ44	925574			thread protein AD7c-NTP [Homo sapiens]		61%	309	509
						65%	361	507
						62%	34	162
						60%	53	172
						41%	304	507
						35%	286	507
						40%	327	473
						50%	50	151
						57%	89	166
						47%	109	171
						37%	308	379
						52%	128	178
		2032	blastx.14	procollagen alpha 2(V) [Homo sapiens]	gi|2370202|emb|CAA 75002.1|	43%	77	9
						40%	89	9
						37%	89	9
						57%	229	188
						47%	183	133
						60%	135	106
						47%	328	278
						75%	165	142
						60%	121	92
						43%	139	92
						54%	165	133
						60%	162	133
						54%	226	194
HDTJI37	799834	2036	HMMER 1.8	PFAM: Laminin B (Domain IV)	PF00052	2.02	386	466
HDTJJ02	913787	2037	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	5.7	21	68
HDTKQ14	886936	2044	HMMER	PFAM: Src homology	PF00018	12.87	430	546

Name	Number	Version	Method	Description	Accession	%	Start	End
HDTLD17	908601	1.8	blastx.2	domain 3 (AL049683) hypothetical protein [Homo sapiens]	emb|CAB41255.1|	100%	439	555
	2052		HMMER 2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	56%	76	291
						96.3	154	222
			blastx.2	Zfp-29 [Mus musculus]	emb|CAA38920.1|	48%	49	636
						65%	49	399
						66%	49	399
						66%	70	399
						65%	49	411
						62%	49	369
						64%	70	381
						47%	115	636
						58%	49	324
						42%	372	641
						50%	375	569
						47%	375	569
						47%	375	569
						48%	372	569
						43%	372	578
						42%	372	602
						46%	375	569
						35%	279	569
						43%	372	569
						43%	375	569
						46%	375	569
						63%	547	636
						63%	547	636
						52%	538	651
						56%	547	642
						35%	375	491

ID			Method	Description	Accession	%	641	667
HEOMG48	963338	2091	blastx.14	very large tegument protein [human herpesvirus 2]	gi|1869859|emb|CAB06722.1|	66%	460	428
						63%	338	303
						50%	290	228
						33%	154	92
						38%	82	41
						50%	219	148
						29%		
HEOMG78	920911	2092	blastx.14	contains similarity to C2 domains [Caenorhabditis elegans]	gi|1825586|gb|AAB42222.1|	70%	294	437
						40%	136	246
HEOMS08	959581	2113	blastx.14	(AF034970) docking protein [Homo sapiens]	gi|3043919|gb|AAC13265.1|	93%	129	173
						83%	172	207
HEOMT79	936687	2118	blastx.14	(AF108420) 1-aminocyclopropane-carboxilate synthase [Fugu rubripes]	gi|4426837|gb|AAD20564.1|	52%	10	210
HEOMU79	965900	2121	blastx.14	HLA-B-associated transcript 2 (BAT2) [Homo sapiens]	gi|179339|gb|AAA35585.1|	29%	320	198
HEOMX92	919200	2131	blastx.14	TGR-CL5bis [Homo sapiens]	gi|1247469|emb|CAA01862.1|	53%	274	230
						38%	129	91
						53%	271	233
						30%	44	6
						27%	206	174
HEOMX92	961148	9562	blastx.14	retrovirus-related reverse transcriptase pseudogene - slow loris	pir|B25313|GNLRL1	46%	44	241
						50%	247	312
HEONQ19	930705	2142	HMMER 2.1.1	PFAM: PH domain	PF00169	42.5	213	533
			blastx.2	(AJ250425) Collybistin I [Rattus norvegicus]	emb|CAB65966.1|	96%	9	629

Clone			Program	Description	Accession	Score/%		
HEONV59	949152	2148	blastx.2	(AK001463) unnamed protein product [Homo sapiens]	dbj|BAA91707.1|	51% 50%	163 284	279 379
HEOPE58	851009	2157	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	5.32	320	364
HEOPO08	958184	2174	blastx.14	alpha-1 type II collagen [Xenopus laevis]	gi|214044|gb|AAA49679.1|	38% 32% 31% 75% 36%	142 429 429 273 208	11 346 334 250 134
HEOQC76	909032	2189	HMMER 2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	86.9	169	237
			blastx.2	(AK001753) unnamed protein product [Homo sapiens]	dbj|BAA91884.1|	37% 33% 35% 52% 29%	139 139 139 154 196	609 609 480 306 582
HEOQP44	942596	2203	HMMER 2.1.1	PFAM: Beta-lactamase	PF00144	420.7	250	1026
HEOQS11	965930	2204	blastx.14	ORF1A [Homo sapiens]	gi|475909|emb|CAA47472.1|	51%	30	152
HEORE79	959572	2214	blastx.14	rehydrin [Tortula ruralis]	gi|1732471|gb|AAB49656.1|	53% 46% 50% 50% 55% 55% 42% 62% 62% 62%	101 101 232 284 58 180 223 58 180 302	145 145 267 325 84 206 264 81 203 325

HHECO01	915285	2250	blastx.14	(AF039691) antigen NY-CO-9 [Homo sapiens]	gi|3170182|gb|AAC1 8040.1|	65% 100%	302 25	174 2
HHEEC07	952455	2267	blastx.14	(AF064257) Dhm1-like protein [Homo sapiens]	gi|5881961|gb|AAD5 5138.1|AF064257 1	99% 100%	1202 1862	1801 1912
HHEHU73	923895	2279	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	4.1	115	156
HHEJH30	961974	2282	blastx.14	(AF180920) cyclin ania-6a [Homo sapiens]	gi|5823554|gb|AAD5 3184.1|AF180920 1	95% 95%	226 429	417 494
HHEND45	919630	2302	HMMER 1.8	PFAM: Double-stranded RNA binding motif	PF00035	12.86	25	114
			blastx.14	[D.melanogaster mRNA, complete cds.], gene product [Drosophila melanogaster]	gi|158506|gb|AAA73 062.1|	52% 47%	1 235	114 297
HHEQK01	871911	2346	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	3.27	64	90
HHEQV39	932851	2354	HMMER 1.8	PFAM: Src homology domain 3	PF00018	30.41	526	708
HHESU85	783820	2381	HMMER 1.8	PFAM: Heat shock hsp90 proteins	PF00183	11.81	88	288
HHETQ54	908567	2392	HMMER 2.1.1	PFAM: KRAB box	PF01352	166.4	233	421
			blastx.14	NK10 [Mus musculus]	gi|506502|emb|CAA5 6225.1|	89%	212	448
HHEUA62	965709	2400	HMMER 1.8	PFAM: Spectrin alpha chain, repeated domain	PF00435	10.48	103	186
			blastx.14	(AB023622) Septin6 [Mus musculus]	gi|5689158|dbj|BAA8 2838.1|	59% 60%	13 211	144 315

HHEUC31	795268	HMMER 2.1.1	PFAM: Ank repeat	PF00023	31.5	3	92
HKBAT27	963724	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.17	11	37
HLMBW11	950728	blastx.14	(AF156884) RIP-like kinase [Homo sapiens]	gi|5059425|gb|AAD39005.1|AF156884_1	92%	129	782
HLMBY16	531053	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	1.99	82	123
HLMDU71	531228	HMMER 2.1.1	PFAM: Phosphate-binding protein	PF01449	48.1	1	123
HLMFU09	909666	blastx.14	(AF151363) Cdc42 GTPase-activating protein [Mus musculus]	gi|5020264|gb|AAD38043.1|AF151363_1	78%	277	372
HLMHP67	967636	blastx.14	Hypothetical bacteriophage n4 receptor protein NfrA precursor. [Escherichia coli]	gi|1651236|dbj|BAA35202.1|	82% / 100%	107 / 3	340 / 104
HLMHT94	531054	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.86	264	284
HLMIX95	960056	blastx.14	(AB008430) CDEP [Homo sapiens]	gi|2766165|dbj|BAA24267.1|	89% / 69%	440 / 47	330 / 9
HLMMA52	920292	blastx.14	ORF-3 protein [Pseudorabies virus]	gi|334072|gb|AAA47471.1|	43% / 100% / 70%	115 / 165 / 174	162 / 176 / 203
HLMMD05	932127	blastx.14	collagen [Ascaris suum]	gi|159657|gb|AAA29371.1|	50% / 61% / 44% / 58% / 63% / 50%	189 / 355 / 189 / 107 / 349 / 387	124 / 317 / 115 / 72 / 317 / 352

Clone	ID	No.	Method	Description	Accession	Score/%	Start	End
HLMMV66	926188					42%	358	317
						50%	407	366
						46%	355	317
						46%	110	66
						32%	189	115
						46%	355	317
		2733	HMMER 1.8	PFAM: Ank repeat	PF00023	17.86	245	322
			blastx.14	similar to HUMORFU (D26069) [Homo sapiens]	gi|488505|dbj|BAA06 418.1|	62%	230	382
						81%	337	384
						86%	404	448
						71%	378	419
						39%	173	256
						43%	99	146
HLMNL55	964739	2769	blastx.14	dynein heavy chain isotype 6 [Tripneustes gratilla]	gi|687206|gb|AAA63 589.1|	70%	19	138
						37%	184	231
HLMNN02	920296	2776	blastx.14	(AF083501) latent nuclear antigen [Macaca mulatta rhadinovirus 17577]	gi|4494984|gb|AAD2 1406.1|	36%	345	289
						53%	191	153
						50%	86	57
						33%	306	208
HLYAA41	909874	2871	HMMER 2.1.1	PFAM: PH domain	PF00169	37.3	162	260
HLYDL60	909866	2980	blastx.14	ORF-3 protein [Pseudorabies virus]	gi|334072|gb|AAA47 471.1|	44%	89	15
						37%	229	158
						35%	376	293
						30%	259	191
						39%	283	215
						75%	179	156
						47%	232	182
						75%	26	3

Clone	No.	No.	Method	Description	Accession	Score		
HLYDS11	966732	2986	blastx.14	orfIV [Borna disease virus]	gi|473842|gb|AAA20666.1|	38% 38% 39%	250 223 200	197 161 3
HLYDT68	526245	2991	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	4.11	89	124
HLYDV62	927872	2993	HMMER 2.1.1	PFAM: PH domain	PF00169	58.6	188	406
			blastx.2	(AC005496) unknown protein [Arabidopsis thaliana]	gb|AAC35236.1|	41% 38%	113 451	292 504
HLYEN93	682176	3005	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.86	383	409
HLYGP46	832311	3042	HMMER 2.1.1	PFAM: IQ calmodulin-binding motif	PF00612	24.4	12	74
HLYHN67	920551	3056	blastx.14	EDTP(egg derived tyrosine phosphatase).	sp|BAA33720|BAA33720	65% 47%	1 264	234 314
HMAAF10	968199	3062	blastx.14	Formate c-acetyltransferase (EC 2.3.1.54). [Escherichia coli]	gi|1651427|dbj|BAA35638.1|	100% 76%	1 347	300 385
HMABJ56	907640	3063	HMMER 2.1.1	PFAM: ADP-ribosylation factor family	PF00025	24.8	157	231
			blastx.14	(AF082517) ADP-ribosylation factor [Entamoeba histolytica]	gi|3746799|gb|AAC64063.1|	39% 56% 61%	281 154 233	403 228 271
HMABQ71	729831	3065	HMMER 2.1.1	PFAM: DNA topoisomerase II (N-terminal region)	PF00204	128.8	210	407

HMADC02	920088	3067	blastx.14	ORF_f418 [Escherichia coli]	gi|536985|gb|AAA97040.1|	95%	202	143
HMADZ55	939916	3071	blastx.2	(AK002022) unnamed protein product [Homo sapiens]	dbj|BAA92041.1|	98%	270	728
HMAFY42	778521	3078	HMMER 2.1.1	PFAM: WH1 domain	PF00568	90	46	303
HMAGK69	723186	3080	HMMER 1.8	PFAM: Signal C termial domain	PF00512	40.87	31	405
HMAIC22	947905	3085	HMMER 2.1.1	PFAM: Peptidase family M3	PF01432	65.9	115	402
			blastx.14	CG Site No. 18031 [Escherichia coli]	gi|466635|gb|AAB18474.1|	84%	112	390
						100%	2	112
						55%	363	422
HMAKA11	966282	9569	blastx.14	MaoB [Escherichia coli]	gi|1480003|dbj|BAA11058.1|	99%	1516	803
						90%	1673	1545
						50%	1587	1474
HMALL66	956195	3091	HMMER 1.8	PFAM: Adenylate kinases	PF00406	50.17	63	296
HMCDN22	895981	3107	blastx.2	(AJ007798) stromal antigen 3, (STAG3) [Homo sapiens]	emb|CAB59367.1|	82%	85	456
						90%	445	573
						71%	10	168
HMCFB22	963794	3110	blastx.14	probable transposase - human transposon MER37	pir|S72481|S72481	73%	183	320
						82%	119	187
						43%	313	423
						61%	5	58
						63%	90	122
HMCGY77	753133	3117	HMMER 2.1.1	PFAM: Kelch motif	PF01344	51.9	7	132
HMMAB49	462502	3127	HMMER	PFAM: Zinc-binding	PF00099	3.49	166	183

ID			Method	Description	Accession	% / Score		
HMMAC19	953580	3129	1.8 blastx.14	metalloprotease domain (AF003535) ORF2-like protein [Homo sapiens]	gi|2197085|gb|AAD04635.1|	47% 47% 87%	26 282 187	145 344 210
HMMCH04	944069	3208	blastx.2	unknown [Homo sapiens]	gb|AAC50940.1|	58%	423	680
HMQBU96	765162	3247	HMMER 1.8	PFAM: Helix-loop-helix DNA-binding domain	PF00010	7.33	8	40
HMQDZ19	940694	3267	blastx.14	urokinase plasminogen activator receptor [Homo sapiens]	gi|433901|emb|CAA52191.1|	100% 91%	89 133	124 168
HMSBV28	970579	3303	blastx.14	YKL249 [Saccharomyces cerevisiae]	gi|871536|emb|CAA49304.1|	92% 51% 50%	260 141 323	108 1 282
HMSCD15	918133	3310	HMMER 1.8	PFAM: Src homology domain 3	PF00018	41.06	453	599
			blastx.2	(AK000975) unnamed protein product [Homo sapiens]	dbj|BAA91451.1|	98% 29% 28%	453 387 80	635 479 175
HMSFR69	738588	3373	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	7.78	258	202
HMSGL27	855759	9573	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	5.56	276	202
HMSGP73	925385	3401	blastx.14	(AC004490) R29381_1 [Homo sapiens]	gi|2995577|gb|AAC08316.1|	94% 95%	141 901	908 972
HMSGX14	871492	3413	HMMER 1.8	PFAM: Ribosomal protein S12	PF00164	33.44	28	153
HMSHO64	746582	3431	HMMER 1.8	PFAM: Src homology domain 3	PF00018	11.08	316	405
			blastx.2	(AF030131) Plenty of SH3s; POSH [Mus	gb|AAC40070.1|	47%	1	411

HMSHZ56	733386	3447	HMMER 1.8	musculus] PFAM: Zinc finger, CCHC class	PF00098	4.89	208	228
HMSJT11	965007	3491	blastx.14	(AF148805) latent nuclear antigen [Kaposis sarcoma-associated herpesvirus]	gi|569894|gb|AAD4 6501.1|AF148805_6	20% 24% 21% 23% 16%	667 241 241 211 139	1137 465 465 453 465
HMSJW19	744990	3498	HMMER 2.1.1	PFAM: BAH domain	PF01426	48.7	2	163
HMSKI08	959413	3509	blastx.14	(AF094516) E1-like protein [Homo sapiens]	gi|3820614|gb|AAC6 9630.1|	97%	97	513
HMSOM08	958216	3538	blastx.14	(AF082556) TRF1-interacting ankyrin-related ADP-ribose polymerase [Homo sapiens]	gi|3929219|gb|AAC7 9841.1|	76%	2	232
HMSOU92	948130	9578	blastx.2	(AF118082) PRO1902 [Homo sapiens]	gb|AAF22026.1|AF1 18094_21	64% 63% 88%	302 462 532	463 527 558
HMSOX47	948202	3548	blastx.14	cDNA EST EMBL:M89462 comes from this gene; cDNA EST 1 1 yk349d7.5 comes from this gene; cDNA EST yk358b9.5 comes from this	gi|3879085|emb|CAA 94301.1|	48% 39% 36% 39% 26%	514 365 266 173 514	612 463 355 256 591
HMVDU16	904807	3589	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	13.38	1252	1329
HMWCQ09	924634	3606	blastx.14	Emf1 alpha [Ephydatia muelleri]	gi|9300|emb|CAA494 72.1|	50% 33% 66%	19 99 217	84 233 243

HMWDD54	932261	blastx.14	(AF175223) SANT domain protein SMRTER [Drosophila melanogaster]	gi|5815245|gb|AAD5 2614.1|AF175223_1	38%	292	345
	3610	blastx.14			53%	122	84
HMWDF88	906769	HMMER 1.8	PFAM: Low-density lipoprotein receptor domain class A	PF00057	41.61	171	245
	3612	blastx.14	(AF110520) NG29 [Mus musculus]	gi|4050096|gb|AAC9 7969.1|	69%	114	239
					48%	129	239
					35%	9	110
					50%	72	107
HMWGG55	920575	blastx.14	DNA polymerase [Pyrococcus furiosus]	gi|216918|dbj|BAA02 362.1|	94%	195	308
HMWGT07	953454	blastx.14	(AL078579) putative protein [Arabidopsis thaliana]	gi|4972120|emb|CAB 43977.1|	40%	218	322
	3645				40%	395	475
					46%	113	157
HMWHN70	851334	HMMER 1.8	PFAM: Zinc finger, C3HC4 type (RING finger)	PF00097	6.51	187	255
	3654						
HNEBJ08	958742	blastx.14	mucin 2 precursor, intestinal - human (fragments)	pir|A49963|A43932	35%	305	264
	3689				83%	320	303
HNEDU01	909832	blastx.14	(AC002398) F25965_3 [Homo sapiens]	gi|2477513|gb|AAB8 1198.1|	71%	207	323
	3748				57%	80	205
					62%	1	87
					43%	323	412
					50%	337	384
HNFEF95	971171	blastx.14	ORF_o493 [Escherichia coli]	gi|606260|gb|AAA58 123.1|	98%	548	201
	3792				89%	103	20
					81%	185	105
HNFFM25	705856	HMMER	PFAM: Laminin B	PF00052	0.47	520	603
	3818						

1470

			(Domain IV)				
HNFFT62	574623	HMMER 1.8	PFAM: C2 domain	PF00168	2.74	207	272
HNFGI01	921431	blastx.14	(AF118890) s-tomosyn isoform [Rattus norvegicus]	gi|4689231|gb|AAD2 7819.1|AF118890_1	86%	234	302
					100%	153	200
					40%	287	361
HNFGI49	909707	blastx.14	(AF086624) serine threonine kinase [Rattus norvegicus]	gi|3800869|gb|AAC6 8900.1|	100%	1	45
					100%	60	86
HNFGM76	908665	HMMER 2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	74.8	232	306
		blastx.2	(AF132599) RANTES factor of late activated T lymphocytes-1 [Homo sapiens]	gb|AAD26864.1|AF1 32599_1	92%	1	417
HNFHA11	967520	HMMER 2.1.1	PFAM: Phosphoenolpyruvate carboxykinase	PF01293	118.1	55	219
		blastx.14	phosphoenolpyruvate carboxykinase [Escherichia coli]	gi|606337|gb|AAA58 200.1|	99%	55	360
HNFHK77	576186	HMMER 2.1.1	PFAM: Aldehyde dehydrogenase family	PF00171	30.2	231	326
HNFHQ01	938114	blastx.14	serine/threonine kinase with SH3 domain, leucine 1	gi|758593|emb|CAA8 8531.1|	28%	248	331
					46%	43	81
					46%	371	415
					25%	79	186
					41%	176	211
HNFHW14	939763	HMMER 2.1.1	PFAM: Latrophilin/CL-1-like GPS domain	PF01825	35.1	44	196

HNFIG07	918389	3921	blastx.2	(AF166382) serpentine receptor [Mus musculus]	gb|AAF00617.1|AF166382_1	44%	38	283
HNFIP50	965283	3936	blastx.14	(AF128881) PI3 kinase regulatory subunit P101 [Homo sapiens]	gi|4928058|gb|AAD33397.1|AF128881_1	80% 60%	2 448	445 477
HNGAL92	953889	3976	blastx.14	mutant sterol regulatory element binding protein-2 1	gi|841318|gb|AAA85718.1|	65% 34% 85%	356 42 665	631 128 685
			blastx.14	phosphatidylserine decarboxylase [Escherichia coli]	gi|551827|gb|AAA83896.1|	73%	212	18
HNGAS51	773208	3984	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.57	144	182
HNGBF80	574475	4001	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	4.98	88	111
HNGBH77	577361	4005	HMMER 1.8	PFAM: ATP synthase A chain	PF00119	9.81	130	189
HNGCE85	970738	4039	blastx.14	hypothetical protein Tigger 2 - human transposon MER37 1	pir|S72489|S72489	72% 63%	284 212	210 180
HNGCX07	953900	4065	HMMER 1.8	PFAM: Src homology domain 3	PF00018	3.68	45	161
HNGEN37	663955	4160	HMMER 2.1.1	PFAM: Indole-3-glycerol phosphate synthases	PF00218	125.4	2	223
HNGEQ07	953647	4169	HMMER 1.8	PFAM: TPR Domain	PF00515	10.86	164	238
HNGER43	699391	4173	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	3.79	151	195
HNGER96	922996	4177	blastx.14	Bkm-like protein [Drosophila melanogaster]	gi|552132|gb|AAA28872.1|	60% 64%	250 250	294 291

.						64% 75% 80%	250 215 28	291 250 57
HNGEW76	572874	4198	HMMER 1.8	PFAM: Helicases conserved C-terminal domain	PF00271	4.66	194	247
HNGEX35	959230	4200	blastx.14	adenine phosphoribosyltransferase [Escherichia coli]	gi|1773151|gb|AAB40223.1|	98%	205	366
HNGEX95	572897	4202	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	5.32	196	219
HNGFG22	573084	4224	HMMER 1.8	PFAM: Bacterial regulatory proteins, luxR family	PF00196	9.2	166	240
HNGFG69	926873	4227	blastx.14	collagen [Ascaris suum]	gi|159657|gb|AAA29371.1|	44% 40% 40% 40% 50%	228 145 145 307 67	175 80 80 248 38
HNGFK28	544726	4234	HMMER 1.8	PFAM: ABC transporters	PF00005	86.07	445	654
			blastx.2	MsbA protein. [Escherichia coli]	dbj|BAA35658.1|	100% 86%	1 654	651 989
HNGFK28	566798	9584	HMMER 1.8	PFAM: ABC transporters	PF00005	86.07	445	654
			blastx.2	MsbA protein. [Escherichia coli]	dbj|BAA35658.1|	100% 100%	1 654	651 989
HNGFK28	943114	9585	HMMER 1.8	PFAM: ABC transporters	PF00005	117.67	342	1
			blastx.2	MsbA protein.	dbj|BAA35658.1|	100%	165	503

						%		
HNGFK28	943115			[Escherichia coli]		84%	25	162
						91%	2	37
		9586	HMMER 2.1.1	PFAM: ABC transporter transmembrane region.	PF00664	60.9	3	242
HNGFO46	935135		blastx.2	MsbA protein. [Escherichia coli]	dbj|BAA35658.1|	99%	3	512
		4244	blastx.14	hypothetical protein T23G5.2 - Caenorhabditis elegans	pir|S28303|S28303	44%	84	10
						60%	116	87
						40%	205	161
						36%	263	198
HNGFO81	526792	4246	HMMER 2.1.1	PFAM: Integrase core domain	PF00665	42.7	84	215
HNGFU12	971170	4265	HMMER 1.8	PFAM: RNase H	PF00075	55.68	102	290
			blastx.14	reverse transcriptase (476 AA) [Woolly monkey sarcoma virus]	gi|930259|emb|CAA3 3367.1|	44%	96	422
						60%	1	75
HNGFW09	924693	4270	blastx.14	180 kDa bullous pemphigoid antigen 2/type XVII collagen [Homo sapiens]	gi|1877435|gb|AAB5 1499.1|	50%	196	155
						53%	167	129
						66%	155	129
						36%	75	1
						75%	152	129
						60%	335	306
						85%	152	132
						85%	152	132
						60%	196	167
						54%	196	164
						50%	289	248
						26%	131	63
						62%	152	129
						75%	152	129

ID	Clone	#	Method	Description	Accession	%		
HNGGH78	924908	4306	blastx.14	type VII collagen [Cricetulus griseus]	gi|388625|gb|AAA36968.1|	75%	152	129
						66%	155	129
						66%	155	129
						60%	193	164
						50%	356	397
						34%	47	115
						42%	285	341
						40%	288	347
						50%	171	206
						58%	171	206
						38%	6	59
						41%	53	103
						50%	171	206
HNGGM10	964819	4317	HMMER 1.8	PFAM: Laminin B (Domain IV)	PF00052	0.51	424	441
HNGGR74	765698	4340	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	6.36	14	58
HNGHT06	935706	4450	blastx.14	unknown protein [Homo sapiens]	gi|1196398|gb|AAA88020.1|	50%	254	177
HNGIJ01	916748	4483	blastx.14	ORF2 [Rattus norvegicus]	gi|56588|emb|CAA37645.1|	50%	168	293
						57%	280	342
						57%	73	114
HNGKE07	952221	4630	blastx.14	collagen type VII [Homo sapiens]	gi|495866|gb|AAA58965.1|	58%	336	286
						55%	93	40
						47%	155	105
						64%	327	286
						57%	266	225
						32%	87	13
						33%	81	1
						62%	355	332
HNGLE52	835972	4662	HMMER	PFAM:	PF00049	6.75	286	318

HNGLG06	839088		1.8	Insulin/IGF/Relaxin family				
		4666	HMMER 1.8	PFAM: ABC transporters	PF00005	47.92	348	599
HNGLH82	954140	4668	blastx.2	Hypothetical protein HI0658 [Escherichia coli]	dbj|BAA35501.1|	99%	270	665
						38%	288	569
HNGMM87	806036	4715	blastx.14	diaminopimelate decarboxylase [Escherichia coli]	gi|455170|gb|AAA83861.1|	98%	416	249
						71%	193	47
						63%	258	136
HNGOO22	953888	4762	HMMER 1.8	PFAM: ATP synthase A chain	PF00119	8.41	237	362
HNHAI11	967668	4790	blastx.14	(AE000449) putative xylanase [Escherichia coli]	gi|1790156|gb|AAC76742.1|	94%	104	3
						91%	151	116
HNHBE19	724404	4798	blastx.14	p15E carboxyterminal sequence [Kirsten murine sarcoma virus]	gi|4469304|emb|CAA25493.1|	38%	262	161
						28%	406	323
						53%	310	272
HNHBY45	774280	4823	HMMER 1.8	PFAM: Helicases conserved C-terminal domain	PF00271	4.4	-113	145
HNHDM74	506621	4878	HMMER 1.8	PFAM: ATP synthase A chain	PF00119	8.4	228	347
			HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	1.89	395	427
HNHDY50	924211	4910	blastx.14	unknown protein [Homo sapiens]	gi|1196398|gb|AAA88020.1|	50%	33	170
						44%	23	169
						41%	6	164
HNHEJ85	964882	4955	blastx.14	synexin - bovine (fragment)	pir|A27695|A27695	54%	47	15
						46%	91	53

HNHET25					40%	114	85
					38%	91	53
	953410	5002	blastx.14	(AJ005562) SPR2D protein [Mus musculus]	gi|3093363|emb|CAA06591.1|	32%	347	246
					43%	250	203
					46%	207	169
HNHFA11	967126	5030	blastx.14	(AF144054) apoptosis related protein APR-4 [Homo sapiens]	gi|4868437|gb|AAD31316.1|AF144054_1	52%	212	355
					35%	342	401
HNHGD07	953416	5121	blastx.14	(AF053091) eyelid [Drosophila melanogaster]	gi|2981221|gb|AAC06254.1|	46%	164	241
					55%	227	280
					33%	295	384
					30%	259	384
					50%	346	381
					36%	268	333
					26%	259	384
					62%	367	390
					42%	322	378
					62%	367	390
					83%	367	384
HNHGE09	939727	5127	blastx.2	IDN4-GGTR14 PROTEIN.	sp|Q9Y6Y5|Q9Y6Y5	81%	2	112
HNHGH20	959499	5146	blastx.14	notch4 [Homo sapiens]	gi|841543|gb|AAC63097.1|	43%	56	9
					77%	154	128
					33%	256	167
					33%	297	244
					62%	131	108
HNHGV22	674653	5189	HMMER 1.8	PFAM: Helicases conserved C-terminal domain	PF00271	4.66	94	138
HNHHI10	964659	5251	blastx.14	ORF1 [Rattus norvegicus]	gi|56587|emb|CAA37644.1|	56%	75	28
					34%	157	71

HNHHL74	765598	5266	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	33% / 63%	220 / 187	158 / 155
HNHIA95	908419	5318	HMMER 2.1.1	PFAM: gag gene protein p24 (core nucleocapsid protein)	PF00607	3.57	83	148
HNHPH29	934456	5496	blastx.14	(AF118275) atrophin-related protein ARP [Homo sapiens]	gi|4680231|gb|AAD27584.1|AF118275_1	60% / 45% / 70% / 50% / 47%	363 / 14 / 91 / 262 / 310	407 / 73 / 120 / 297 / 360
HOIAE91	935322	5497	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.66	200	235
HSATQ28	866951	5512	HMMER 1.8	PFAM: Ubiquitin carboxyl-terminal hydrolases family 2	PF00442	11.1	90	122
HSAYN79	471037	5646	HMMER 1.8	PFAM: RNA recognition motif. (aka RRM, RBD, or RNP domain)	PF00076	4.12	360	380
HSYBL15	660053	5682	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	22.31	2	70
HSYDP04	970789	5686	blastx.14	(AF113615) FH1/FH2 domain-containing protein FHOS [Homo sapiens]	gi|5106956|gb|AAD39906.1|AF113615_1	100% / 50% / 47%	77 / 408 / 393	394 / 467 / 443
HT3SA07	954360	5702	blastx.14	ORF2 contains a reverse transcriptase domain.; ORF2 [Homo sapiens]	gi|339771|gb|AAA51622.1|	50% / 54%	83 / 47	178 / 79
HT4GJ85	909971	5714	HMMER	PFAM: PH (pleckstrin	PF00169	11.11	365	451

Clone	Gene #	Analysis #	Method	Description (homology) domain	Accession	Score			Start			End		
HT5EA69	952359		1.8 blastx.14	(AF053974) SWAP-70 [Mus musculus]	gi|3290154|gb|AAC40155.1|	53%	88%	33%	251	4	448	448	54	492
		5721	blastx.14	(AL032624) cDNA EST yk321h8.5 comes from this gene; 1 from this gene [Caenorhabditis elegans]	gi|3881086|emb|CAA21522.1|	37%	30%		264	123		479	251	
HTAAW46	719422	5735	HMMER 1.8	PFAM: HMG (high mobility group) box	PF00505	5.82			6			35		
HTABG87	940153	5745	HMMER 1.8	PFAM: Eukaryotic protein kinase domain	PF00069	13.81			240			335		
			blastx.14	(AF006064) protein kinase homolog [Fowlpox virus]	gi|2393890|gb|AAC58236.1|	54%	33%		8	189		139	356	
HTACW17	961560	5760	blastx.14	(AC007660) unknown protein [Arabidopsis thaliana]	gi|4895220|gb|AAD32806.1|AC007660_7	37%	61%		54	212		221	265	
HTAFE69	944409	5797	blastx.2	(AK000496) unnamed protein product [Homo sapiens]	dbj|BAA91205.1|	69%			432			704		
HTAHL45	908949	5817	HMMER 2.1.1	PFAM: SCAN domain	PF02023	228.7			268			555		
			blastx.14	(AC004522) Zn-finger-like protein; similar to Z98745 (PID:g2924250) [Homo sapiens]	gi|3006231|gb|AAC09486.1|	65%	36%		220	529		534	642	
HTAHV04	926747	5826	blastx.14	(AC005757) R32611_1 [Homo sapiens]	gi|3688089|gb|AAC62258.1|	100%			3			446		
HTAJN08	958057	5841	HMMER	PFAM: Helicases	PF00271	5.49			20			55		

HTDAE43	971582	1.8 blastx.14	conserved C-terminal domain (AF144054) apoptosis related protein APR-4 [Homo sapiens]	gi|4868437|gb|AAD3 1316.1|AF144054_1	53%	526	296
HTGCH58	909849	HMMER 2.1.1	PFAM: RhoGAP domain	PF00620	91.4	420	797
		blastx.14	carboxyl terminus of the predicted protein shows 1 1 comes from this gene; cDNA EST EMBL:D32994 comes from this gen	gi|3874826|emb|CAA 86318.1|	37% 44% 61%	420 657 771	605 758 809
HTGDM65	967158	blastx.14	SH3 domain binding protein [Rattus norvegicus]	gi|1185397|gb|AAA8 7791.1|	39% 50% 39% 47% 39% 28% 40%	127 186 278 186 278 337 260	59 139 210 136 210 263 195
HTGDT91	974962	HMMER 2.1.1	PFAM: SpoU rRNA Methylase family	PF00588	107.6	315	638
		blastx.14	alternate gene name yibK [Escherichia coli]	gi|466744|gb|AAB18 583.1|	100% 100% 76% 81%	315 531 457 497	467 638 495 529
HTGDW96	967030	HMMER 2.1.1	PFAM: Domain of unknown function	PF01784	130.2	334	711
		blastx.14	(AL034490) similar to yeast ngg1-interacting factor 3	gi|4008560|emb|CAA 22481.1|	60% 43% 37%	1087 460 385	1275 660 513

HTGEL46	685425			[Schizosaccharomyces pombe]		61% 28% 58%	361 970 1312	414 1065 1347
		5936	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	7.26	398	433
HTGEQ11	967047	5944	HMMER 2.1.1	PFAM: Cytosol aminopeptidase family	PF00883	191	27	305
			blastx.14	aminopeptidase A [Escherichia coli]	gi|1054725|emb|CAA60164.1|	95% 83% 88%	27 320 1	305 391 27
HTGER72	683469	5949	HMMER 1.8	PFAM: Src homology domain 3	PF00018	2.4	174	203
HTGFZ03	923443	5968	HMMER 2.1.1	PFAM: RNA polymerase beta subunit	PF00562	30.7	21	110
			blastx.14	(AF025424) RNA polymerase I 127 kDa subunit [Rattus norvegicus]	gi|2739048|gb|AAB94600.1|	76%	3	275
HTGGL23	974590	5973	blastx.14	(AE000218) putative adhesion and penetration protein [Escherichia coli]	gi|1787452|gb|AAC74286.1|	87%	3	443
HTHCB68	660309	5996	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	3	162	209
HTJAB35	880424	9601	HMMER 1.8	PFAM: Ank repeat	PF00023	35.64	242	325
HTJMT23	948518	6056	blastx.14	(AF182426) arylacetamide deacetylase [Rattus norvegicus]	gi|5923874|gb|AAD56394.1|AF182426_1	58%	2	160
HTOAK34	966800	6081	HMMER	PFAM: Eukaryotic protein	PF00069	32.41	1020	1190

Clone	Seq	ID	Method	Description	Accession	Score/%	Start	End
HTODG16	909952		1.8 / blastx.14	kinase domain / (AF084205) serine/threonine protein kinase TAO1 [Rattus norvegicus]	gi|3452473|gb|AAC7 1014.1|	75%	954	1190
		6108	HMMER 2.1.1	PFAM: RasGEF domain	PF00617	148.5	4	402
HTOFT34	527144		blastx.14	CDC25 [Saccharomyces kluyveri]	gi|171187|gb|AAA34 479.1|	34%	13	399
		6146	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	4.53	235	264
HTOHL35	537364	6173	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	6.52	4	33
HTOIY09	836003	6201	HMMER 1.8	PFAM: Insulin/IGF/Relaxin family	PF00049	7.08	61	123
HTSHF47	720403	6229	HMMER 1.8	PFAM: Helix-loop-helix DNA-binding domain	PF00010	7.82	105	140
HTSHM38	972248	6230	HMMER 2.1.1	PFAM: EGF-like domain	PF00008	72	299	406
			blastx.14	(AB011532) MEGF6 [Rattus norvegicus]	gi|3449294|dbj|BAA3 2462.1|	88%	287	538
						50%	278	460
						53%	320	466
						42%	299	460
						42%	287	442
						43%	290	427
						40%	341	481
						46%	287	415
						70%	114	173
						66%	413	457

532	467	50%
283	245	61%
280	188	35%
538	482	47%
295	245	52%
544	476	39%
283	245	61%
283	188	31%
286	245	50%
280	170	29%
283	230	55%
283	245	69%
283	245	53%
532	485	50%
535	452	35%
532	482	47%
532	482	47%
304	245	50%
412	299	31%
280	251	70%
286	251	58%
532	434	30%
280	245	58%
283	245	53%
316	245	37%
349	317	63%
268	245	75%
295	245	47%
322	251	37%
283	251	54%
406	320	31%

286	230	36%
460	401	40%
232	203	60%
505	473	54%
376	308	34%
280	245	50%
445	329	25%
268	245	62%
532	485	37%
343	251	29%
262	227	50%
283	251	45%
406	296	24%
505	485	71%
532	473	40%
406	344	33%
379	359	71%
280	245	50%
483	454	60%
268	245	62%
544	491	33%
382	320	33%
376	344	63%
382	359	62%
223	203	71%
235	203	45%
262	215	37%
406	359	37%
409	356	38%
376	320	36%
379	320	40%

HTWCG65	869547	6260	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	60%	251	280
HTWEY30	918641	6299	blastx.14	(AF036548) RGC-32 [Rattus norvegicus]	gi|3800742|gb|AAC68839.1|	15.45 88%	220 613	306 434
HTWJA59	812705	6314	HMMER 1.8	PFAM: Helicases conserved C-terminal domain	PF00271	4.95	172	219
HTXCY84	924996	6359	HMMER 2.1.1	PFAM: Aldehyde dehydrogenase family	PF00171	23.9	104	217
			blastx.14	(AF038838) proline dehydrogenase [Klebsiella aerogenes]	gi|2766693|gb|AAB95478.1|	78% 45% 41%	47 16 20	241 48 70
HTXDW14	966588	6366	blastx.14	(AB029335) HrPET-3 [Halocynthia roretzi]	gi|5360271|dbj|BAA81908.1|	54% 45%	869 773	777 663
HTXDX61	784768	6367	HMMER 2.1.1	PFAM: Amidase	PF01425	123.2	61	330
HTXFN69	869397	6394	HMMER 1.8	PFAM: HMG (high mobility group) box	PF00505	6.76	72	137
HTXGL73	529745	6403	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.21	144	176
HTXJI68	912611	6420	blastx.14	RAB14 [Rattus norvegicus]	gi|206535|gb|AAA41994.1|	97% 60% 59% 52%	230 367 482 373	370 450 547 429
HTXJM73	783572	6425	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	2.87	97	123
HTXKQ55	947789	6453	HMMER 2.1.1	PFAM: Peptidase family M3	PF01432	50.1	3	299

Clone ID	SEQ	Method	Description	Accession	% Identity		
		blastx.14	mitochondrial intermediate peptidase precursor [Homo sapiens]	gi|1763642|gb|AAC5 1231.1|	96% 100%	3 335	302 367
HTXNY74	918076	blastx.14	(AF078856) p47 [Homo sapiens]	gi|5531827|gb|AAD4 4488.1|	89% 96%	93 2	530 94
HTXPT68	870074	HMMER 2.1.1	PFAM: NOL1/NOP2/sun family	PF01189	43.1	29	196
HTXQC36	961161	blastx.14	(AB012223) ORF2 [Canis familiaris]	gi|2981631|dbj|BAA2 5253.1|	51% 57% 60% 42%	9 326 145 170	143 382 174 247
HTXRM86	975072	HMMER 2.1.1	PFAM: Prokaryotic DNA topoisomerase	PF01131	99	243	446
		blastx.14	DNA topoisomerase III (EC 5.99.1.-) [Escherichia coli]	gi|1742870|dbj|BAA1 5551.1|	51% 40%	177 3	440 158
HTXSB88	914627	blastx.14	(AF077042) 30S ribosomal protein S7 homolog [Homo sapiens]	gi|4689132|gb|AAD2 7775.1|AF077042_1	84%	559	771
HTXSR92	973095	blastx.2	(AB016962) synGAP-b1 [Rattus norvegicus]	dbj|BAA74972.1|	60% 55%	302 1	421 60
HUJAM39	911399	blastx.14	(AF051325) SH3 domain containing adaptor protein [Homo sapiens]	gi|4091782|gb|AAC9 9298.1|	46% 32%	170 709	310 885
HUJCM08	957784	blastx.14	(AF015950) telomerase reverse transcriptase [Homo sapiens]	gi|2330017|gb|AAC5 1672.1|	100%	2	244
HUUAV06	966816	blastx.14	(AF151854) CGI-96 protein [Homo sapiens]	gi|4929661|gb|AAD3 4091.1|AF151854_1	88% 100% 68% 36%	595 464 537 561	521 396 481 487

HWAAF66	908541	6612	HMMER 2.1.1	PFAM: KRAB box	PF01352	65.3	90	278
			blastx.14	repressor protein [Homo sapiens]	gi|2789430|dbj|BAA24380.1|	54%	60	212
HWAAY03	923734	6619	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.21	332	373
HWACA38	943074	6637	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	3.68	344	376
			blastx.14	(AL03536) predicted using Genefinder; similar to 1 1 1 elegans]	gi|3947651|emb|CAA22138.1|	39% 52%	251 766	433 834
HWADF26	957347	6656	HMMER 1.8	PFAM: Lectin C-type domain short and long forms	PF00059	104.26	859	509
			blastx.2	(AF175206) lectin-like receptor F1 [Homo sapiens]	gb|AAF37804.1|AF175206_1	100%	3	596
HWAEN20	868490	6691	HMMER 1.8	PFAM: Zinc finger, C2H2 type	PF00096	6.01	251	313
HWAFW39	947915	6697	HMMER 2.1.1	PFAM: Peptidase family M1	PF01433	79.5	200	367
			blastx.2	(AF106037) adipocyte-derived leucine aminopeptidase [Homo sapiens]	gb|AAF07395.1|AF106037_1	96%	200	367
HWAFX39	907631	6698	blastx.14	Zn-binding protein [Pleurodeles waltl]	gi|213868|gb|AAA49614.1|	46% 50%	118 19	354 120
HWAGM33	888685	6710	HMMER 2.1.1	PFAM: Plexin repeat	PF01437	25.8	898	1035

HWAGX37	959586	blastx.14	unknown protein [Homo sapiens]	gi|1196433|gb|AAA8 8038.1|	47% / 34% / 42% / 29%	215 / 535 / 409 / 295	283 / 639 / 471 / 396
HWAHI10	960646	blastx.14	retinoid X receptor interacting protein [Mus musculus]	gi|709961|gb|AAC52 167.1|	62% / 66% / 45% / 44% / 66%	1215 / 513 / 642 / 1272 / 1824	583 / 343 / 412 / 1198 / 1798
HWAHS94	909667	blastx.14	(AF151363) Cdc42 GTPase-activating protein [Mus musculus]	gi|5020264|gb|AAD3 8043.1|AF151363_1	63% / 75%	278 / 487	484 / 510
HWBAL44	959449	blastx.14	(AF151877) CGI-119 protein [Homo sapiens]	gi|4929707|gb|AAD3 4114.1|AF151877 1	100%	531	424
HWBAQ16	868363	HMMER 1.8	PFAM: RNA recognition motif (aka RRM, RBD, or RNP domain)	PF00076	4.8	857	898
HWBBR65	747723	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	4.15	185	205
HWBDM24	963498	blastx.14	(AJ388555) hypothetical protein [Canis familiaris]	gi|5441611|emb|CAB 46854.1|	83% / 100% / 88%	908 / 990 / 837	997 / 1040 / 863
HWBEX27	682583	HMMER 1.8	PFAM: Helix-loop-helix DNA-binding domain	PF00010	38.64	184	336
HYAAF33	915050	blastx.14	(AF121858) sorting nexin 8 [Homo sapiens]	gi|4689256|gb|AAD2 7831.1|AF121858_1	81% / 96% / 36%	273 / 217 / 172	434 / 306 / 270
HYAAS08	926017	blastx.14	ORF-3 protein [Pseudorabies virus]	gi|334072|gb|AAA47 471.1|	62% / 34% / 36% / 63%	203 / 84 / 125 / 150	156 / 7 / 69 / 118

Clone			Method	Description	Accession			
HYABP53	971448	6848	HMMER 2.1.1	PFAM: Immunoglobulin domain	PF00047	37%	282	211
HYABB43	800006	6860	HMMER 2.1.1	PFAM: Alpha-2-macroglobulin family	PF00207	27.8	257	427
			blastx.2	gb|AAA39508.1| alpha-2-macroglobulin [Mus musculus]		90.9	206	27
						67%	263	36
HYAAU65	909956	6863	HMMER 2.1.1	PFAM: RasGEF domain	PF00617	47	2	112
HWBEG18	909798	6883	HMMER 2.1.1	PFAM: EF hand	PF00036	33.3	505	591
			blastx.14	gi|4038292|gb|AAC97349.1| (AF106071) ras activator RasGRP [Homo sapiens]		71%	698	889
						59%	382	597
						46%	103	420
						70%	604	684
						48%	2	142
						66%	619	654
HWBCS08	909031	6897	HMMER 2.1.1	PFAM: B-box zinc finger.	PF00643	32.5	263	388
			blastx.14	gi|4325109|gb|AAD17259.1| (AF119043) transcriptional intermediary factor 1 gamma; TIF1gamma [Homo sapiens]		92%	2	562
HWBAQ71	944080	6918	blastx.2	emb|CAA97423.1| predicted using Genefinder [Caenorhabditis elegans]		34%	141	464
HWAFG12	969605	6934	blastx.14	gi|5305335|gb|AAD41594.1|AF071081_1 (AF071081) proline-rich mucin homolog [Mycobacterium tuberculosis]		34%	112	17
						50%	195	142
						28%	398	264
						40%	365	300

HWAFA47	948858	6938	blastx.2	(AF010144) neuronal thread protein AD7c-NTP [Homo sapiens]	gb|AAC08737.1|	34%	219	142
						44%	154	101
						32%	374	300
						34%	365	297
						34%	332	264
						63%	338	306
						29%	365	294
						38%	314	261
						59%	208	14
						50%	178	14
						40%	253	80
						77%	78	13
						52%	93	25
						76%	249	211
						42%	221	165
						75%	240	205
						42%	237	160
						90%	357	328
						25%	248	168
HWAEU35	887166	6942	HMMER 2.1.1	PFAM: Immunoglobulin domain	PF00047	23.2	40	273
			blastx	CMRF-35 antigen [Homo sapiens]	emb|CAA46948.1|	55%	7	162
						59%	169	279
						60%	400	474
						38%	346	399
						42%	316	372
HWAEG71	931547	6946	HMMER 1.8	PFAM: Ras family (contains ATP/GTP binding P-loop)	PF00071	147.95	116	475
			blastx.2	rab-related GTP-binding protein [Rattus	gb|AAA42000.1|	98%	86	493
						80%	477	569

HWAEC08	958115	6947	HMMER 2.1.1	norvegicus] PFAM: Spectrin repeat	PF00435	29.5	3	215
			blastx.14	(AL080133) hypothetical protein [Homo sapiens]	gi|5262574|emb|CAB 45729.1|	69% 70% 31% 29%	12 381 18 228	209 452 209 308
HWACY70	756888	6956	HMMER 2.1.1	PFAM: RIO1/ZK632.3/MJ0444 family	PF01163	96	280	552
HWABG11	949088	6971	HMMER 2.1.1	PFAM: Glucosamine-6-phosphate isomerase	PF01182	225.7	67	381
			blastx.2	unnamed protein product [unidentified]	emb|CAA03416.1|	91%	67	480
HUUDR34	944903	6984	blastx.14	similar to SH3-binding protein [Homo sapiens]	gi|4826478|emb|CAB 42896.1|	82% 100% 77% 100%	2 571 552 596	550 594 578 616
HUUCJ02	940813	6986	blastx.14	(AF132984) nuclear pore complex interacting protein NPIP [Homo sapiens]	gi|4959568|gb|AAD3 4394.1|AF132984_1	99% 89% 71% 58% 87% 100% 54% 60% 81% 83% 40% 100% 90%	770 417 300 226 278 261 261 258 181 152 229 152 192	417 250 187 119 231 226 196 199 149 117 149 126 163

Clone			Method	Description	Accession			
						66%	300	274
HTXOO15	869261	7011	HMMER 2.1.1	PFAM: Ubiquitin family	PF00240	44.9	130	273
HTXLS08	958357	7023	blastx.14	(AF090989) high-risk human papilloma viruses E6 1 alpha [Homo sapiens]	gi|415328|gb|AAD1 2543.1|	48%	745	987
						68%	1006	1146
						41%	1	237
						57%	511	645
						70%	427	477
						27%	580	645
HTWKB07	952841	7085	blastx.14	(AF003535) ORF2-like protein [Homo sapiens]	gi|2197085|gb|AAD0 4635.1|	60%	25	84
						75%	259	294
						50%	205	258
						33%	36	116
						70%	167	196
HTWJH08	790185	7087	blastx.2	(AK000385) unnamed protein product [Homo sapiens]	dbj|BAA91131.1|	61%	197	51
HTWJH08	846554	9615	blastx.2	(AK000385) unnamed protein product [Homo sapiens]	dbj|BAA91131.1|	61%	197	51
HTWJF50	911448	7089	blastx.14	myosin I [Rattus norvegicus]	gi|3724141|emb|CAA 50871.1|	48%	1009	1428
						53%	334	681
						55%	732	851
						46%	863	1012
						39%	40	108
						50%	686	715
HTWFQ19	586124	7091	HMMER 2.1.1	PFAM: Sema domain	PF01403	62.9	14	184
HTOIA82	844319	7198	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	4.25	50	82
HTOHI14	659280	7204	HMMER	PFAM: Asparaginase	PF01112	20.7	140	217

			2.1.1					
HTODM08	960113	7222	blastx.14	(AF106069) deubiquitinating enzyme [Homo sapiens]	gi|5814097|gb|AAD52099.1|AF106069_1	33%	5	367
HTHBY73	946168	7282	blastx.2	(AK001868) unnamed protein product [Homo sapiens]	dbj|BAA91951.1|	52% / 45%	4 / 162	183 / 332
HTGEX10	963862	7305	HMMER 2.1.1	PFAM: SET domain	PF00856	105.2	580	960
			blastx.14	(AC005065) determined by GENSCAN prediction and 1	gi|4153862|gb|AAD04721.1|	65% / 40%	601 / 337	1017 / 477
HTGEA37	908606	7311	blastx.14	(AF001293) aiolos [Mus musculus]	gi|2150044|gb|AAB58795.1|	80%	1	216
HTAIF22	910040	7364	HMMER 2.1.1	PFAM: RhoGEF domain	PF00621	29.5	320	394
			blastx.14	(AL022271) similar to Guanine nucleotide exchange 1 1 1 this g	gi|3876654|emb|CAA18349.1|	64%	281	397
HTAIF11	965738	7365	blastx.14	(AF061555) ubiquitin-protein ligase E3-alpha [Mus musculus]	gi|3170887|gb|AAC40165.1|	48% / 50%	6 / 297	293 / 392
HTAEV23	959129	7369	HMMER 2.1.1	PFAM: WW domain	PF00397	25.9	478	386
HTAEP05	932459	7370	blastx.14	This gene is novel. [Homo sapiens]	gi|603953|dbj|BAA07893.1|	89%	823	359
				Pro-Pol-dUTPase polyprotein [Mus musculus]	gi|2065210|emb|CAA73251.1|	76% / 48% / 47% / 44%	225 / 406 / 3 / 500	275 / 510 / 59 / 553

ID	No. 1	No. 2	Method	Description	Accession	% / Score	Pos. 1	Pos. 2
HTABK47	720684	7379	HMMER 2.1.1	PFAM: Monooxygenase	PF01360	77% 23.3	386 371	412 430
HSYCV01	940661	7408	HMMER 1.8	PFAM: Hydroxymethylglutaryl-coenzyme A reductase	PF00369	7.29	448	492
HSAWR08	959943	7458	blastx.14	(AL110271) hypothetical protein [Homo sapiens]	gi|5817084|emb|CAB53709.1|	98%	123	287
HSAUL84	908440	7504	HMMER 2.1.1	PFAM: gag gene protein p24 (core nucleocapsid protein)	PF00607	43.3	105	302
			blastx.14	gag protein [Human endogenous retrovirus K]	gi|1780975|emb|CAA71418.1|	83% 60%	135 24	299 152
HNHOF94	948720	7551	blastx.2	(AK000496) unnamed protein product [Homo sapiens]	dbj|BAA91205.1|	67%	176	484
HNHNP81	928378	7554	HMMER 1.8	PFAM: 7 transmembrane receptor (rhodopsin family)	PF00001	58.09	233	511
			blastx.2	(AF091575) olfactory receptor [Rattus norvegicus]	gb|AAC64595.1|	61% 52%	236 502	505 618
HNHLC01	915363	7581	blastx.14	unknown protein [Homo sapiens]	gi|1196431|gb|AAA88036.1|	46% 40% 36% 61% 46%	5 57 133 219 260	82 131 207 257 304
HNHGV62	743400	7603	blastx.2	(AK000385) unnamed protein product [Homo sapiens]	dbj|BAA91131.1|	62% 76%	52 287	285 349

						3.3	83	109
HNHGE31	698046	7624	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	3.3	83	109
HNHFV49	975415	7644	blastx.2	hypothetical protein (L1H 3' region) - human	pir|B34087|B34087	81% 71% 90%	483 227 217	190 6 188
HNHFH24	903741	7657	HMMER 2.1.1	PFAM: Sodium:neurotransmitter symporter family	PF00209	37.2	208	306
			blastx.14	(AF075266) orphan transporter isoform B9 [Mus musculus]	gi|3347930|gb|AAC2 7761.1|	76% 27%	187 414	327 467
HNHDF07	953883	7702	HMMER 1.8	PFAM: Fibronectin type III domain	PF00041	7.48	242	319
HNHDC29	904546	7704	blastx.14	contactin associated protein [Homo sapiens]	gi|1857708|gb|AAB4 8481.1|	98%	219	7
HNHCI32	861673	7716	HMMER 1.8	PFAM: 7 transmembrane receptor (rhodopsin family)	PF00001	133.17	195	545
			blastx.2	(AF112461) G protein-coupled receptor 57 [Homo sapiens]	gb|AAF27279.1|AF1 12461_1	100% 100% 100%	189 112 56	551 186 112
HNHCI32	956105	9645	HMMER 1.8	PFAM: 7 transmembrane receptor (rhodopsin family)	PF00001	133.17	951	601
			blastx.2	(AF112461) G protein-coupled receptor 57 [Homo sapiens]	gb|AAF27279.1|AF1 12461_1	100% 100% 100%	555 478 422	917 552 478
HNHBF47	949027	7731	HMMER 1.8	PFAM: Cadherin	PF00028	44.76	668	522
			blastx.2	(AB028499) Flamingo 1	dbj|BAA84070.1|	96%	409	666

			[Mus musculus]		
259	5	92%			
923	666	91%			
398	243	86%			
660	412	42%			
660	370	36%			
660	412	36%			
896	669	43%			
699	355	33%			
884	666	43%			
890	648	39%			
247	20	38%			
253	11	32%			
648	361	30%			
235	14	36%			
884	654	39%			
247	14	37%			
247	26	35%			
878	666	35%			
699	412	32%			
854	672	37%			
708	433	28%			
380	270	40%			
380	270	35%			
398	270	37%			
371	270	44%			
371	270	38%			
362	264	33%			
829	683	32%			
262	2	29%			
764	723	57%			
374	270	35%			

Clone	ID	ID2	Tool	Description	Hit	% / Score	412	480
HNHAF61	742116	7745	HMMER 1.8	PFAM: Cadherin	PF00028	39% / 46.67	330	461
			blastx.2	(AF152473) protocadherin alpha C1 short form protein [Homo sapiens]	gb|AAD43734.1|AF152473_1	75%	81	677
						84%	173	364
						33%	87	686
						93%	1	84
						40%	10	75
HNHAF61	955094	9649	blastx.14	(AF152303) protocadherin alpha C1 [Homo sapiens]	gi|5456892|gb|AAD43697.1|	98%	325	1071
						40%	715	987
						42%	499	660
						32%	778	1023
						37%	724	867
						100%	225	275
						77%	176	229
						30%	496	684
						89%	269	325
						35%	895	1011
						40%	568	663
						36%	717	791
						50%	499	540
HNGOZ40	969158	7757	blastx.14	(AF155098) NY-REN-8 antigen [Homo sapiens]	gi|5360091|gb|AAD42864.1|AF155098_1	78%	599	477
HNGNY02	918626	7769	HMMER 1.8	PFAM: FAD/NAD-binding domain in oxidoreductases	PF00175	4.43	366	440
HNGND01	915294	7778	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.07	464	490
HNGMW65	950173	7781	blastx.2	(AF010144) neuronal thread protein AD7c-NTP	gb|AAC08737.1|	62%	340	143
						67%	340	248

Clone			Method	Description	Reference	%		
				[Homo sapiens]		45%	417	247
						60%	345	247
						55%	80	3
						68%	81	25
						43%	200	111
						43%	414	346
						55%	205	152
						64%	392	351
						57%	202	125
						47%	86	18
HNGMD48	974358	7788	HMMER 1.8	PFAM: Cystatin domain	PF00031	6.93	269	349
HNGLY08	948825	7791	blastx.14	(AJ010949) calcium channel alpha-2-delta-C subunit [Mus musculus]	gi|4186073|emb|CAA09423.1|	79%	219	392
HNGLL07	952236	7795	blastx.14	KERATIN TYPE II CYTOSKELETAL 8 (FRAGMENT).	sp|Q29386|Q29386	41%	199	77
						71%	43	2
						83%	77	42
						72%	242	210
HNGKM74	942758	7801	HMMER 1.8	PFAM: HMG (high mobility group) box	PF00505	5.95	437	526
			blastx.2	(AL117470) hypothetical protein [Homo sapiens]	emb|CAB55945.1|	40%	2	817
HNGIR10	964715	7837	blastx.14	NK10 [Mus musculus]	gi|506502|emb|CAA56225.1|	61%	196	2
						62%	193	2
						54%	199	2
						52%	196	2
						54%	193	2
						53%	199	2
						50%	193	2
						44%	196	8

Clone	Seq ID	Method	Description	Accession	%		
					45%	193	2
					61%	199	92
					57%	196	83
					37%	178	11
					26%	217	2
					39%	115	2
					46%	181	104
					50%	232	197
					33%	309	256
					30%	306	238
HNGFF50	941480	blastx.14	(AJ010949) calcium channel alpha-2-delta-C subunit [Mus musculus]	gi|4186073|emb|CAA-09423.1|			
HNGEO79	951489	HMMER 1.8	PFAM: IG (immunoglobulin) superfamily	PF00047	78%	285	130
					86%	986	921
		blastx	(AF143185) high affinity immunoglobulin gamma Fc 1	gb|AAD34946.1|AF1 43185_1	33.71	290	466
HNGEI11	967314	blastx.14	pol polyprotein [Baboon endogenous virus]	gi|509838|gb|AAA87 332.1|	54%	287	385
					41%	404	520
					77%	230	283
					36%	140	214
HNGDMI1	967512	blastx.14	reverse transcriptase [Homo sapiens]	gi|439877|gb|AAB02 291.1|	70%	258	317
					42%	39	152
					53%	324	368
					36%	381	292
					50%	276	205
					47%	154	104
					20%	210	82
HNGDA08	959964	HMMER 1.8	PFAM: Zinc finger, CCHC class	PF00098	5.01	261	284
HNGAZ08	959977	blastx.14	p40 [Homo sapiens]	gi|2072966|gb|AAC5 1272.1|	45%	391	320
					40%	93	19

HNFID11	966347	7997	blastx.14	(AF132948) CGI-14 protein [Homo sapiens]	gi|4680667|gb|AAD2 7723.1|AF132948_1	40% 35%	144 316	100 266
HNFHR56	733297	8003	HMMER 1.8	PFAM: IG (immunoglobulin) superfamily	PF00047	100%	14	115
HNEDO77	955894	8051	blastx.14	(AB020063) Keap1 [Mus musculus]	gi|3894323|dbj|BAA3 4639.1|	2.96	200	150
						90%	384	64
						44%	387	91
						42%	420	91
						38%	339	91
						44%	387	232
						100%	79	44
						27%	402	316
						85%	360	340
HNEBJ81	529571	8067	HMMER 2.1.1	PFAM: N-acetyltransferase	PF00797	40.5	18	125
HMWEN61	909931	8125	blastx.14	(AF020313) proline-rich protein 48 [Mus musculus]	gi|2624972|gb|AAB9 4880.1|	84% 100%	89 89	307 9
HMWBT59	893995	8141	HMMER 1.8	PFAM: 4 transmembrane segments integral membrane proteins	PF00335	27.49	51	113
HMSMN71	927097	8184	HMMER 1.8	PFAM: Ubiquitin family	PF00240	32.11	24	200
			blastx.14	(AF176069) ubiquilin [Homo sapiens]	gi|5733824|gb|AAD4 9751.1|AF176069_1	78% 63% 53%	3 550 550	518 606 594
HMSJL53	921263	8196	blastx.14	decorin (PGII) [Mus musculus]	gi|53669|emb|CAA37 876.1|	36% 46% 35%	281 48 134	403 131 244

HMSHE81	784966	8218	HMMER 2.1.1	PFAM: PX domain	PF00787	29.1	128	421
HMSDL70	909997	8240	blastx.14	(AF083331) kinesin-like protein KIF1B [Rattus norvegicus]	gi|3493139|gb|AAC3 3292.1|	100%	2	103
HMSBO95	796724	8258	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.61	273	302
HMMBL55	731523	8320	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.03	227	271
HMMAT08	959005	8327	blastx.14	DOCK180 protein [Homo sapiens]	gi|1339910|dbj|BAA0 9454.1|	49% / 66%	137 / 310	301 / 426
HMCHZ77	771795	8350	HMMER 2.1.1	PFAM: Nucleoside transporter	PF01733	81.6	5	283
HMALZ77	856266	8362	HMMER 2.1.1	PFAM: Isochorismatase family	PF00857	88.5	2	232
HMAJL09	950168	8365	HMMER 1.8	PFAM: ADP-glucose pyrophosphorylase	PF00483	150.92	20	256
			blastx.14	f270 [Escherichia coli]	gi|290545|gb|AAA62 048.1|	100% / 100%	254 / 468	469 / 512
HMAIQ20	669436	8367	HMMER 1.8	PFAM: Bacterial mutT protein	PF00293	3.43	172	234
HMAIH15	956705	8368	blastx.2	Hypothetical protein MJ0456 [Escherichia coli]	dbj|BAA35499.1|	100%	3	203
HMAIA55	899404	8369	blastx.2	(AF027204) putative tetraspan transmembrane protein L6H [Homo sapiens]	gb|AAB82947.1|	35% / 39%	188 / 601	532 / 789
HMADF74	944465	8377	HMMER 2.1.1	PFAM: Leucine Rich Repeat	PF00560	42.8	369	440

HMACV54	922354		blastx.2	leucine-rich repeat protein [Arabidopsis thaliana]	emb|CAA76000.1|	34%	294	674
HMABD66	388074	8379	HMMER 2.1.1	PFAM: Aldose 1-epimerase	PF01263	116	418	176
		8381	HMMER 2.1.1	PFAM: 60Kd inner membrane protein	PF02096	59.8	222	365
HLYHK61	932994	8386	blastx.14	GTP binding protein [Mus musculus]	gi|53169|emb|CAA36803.1|	88% 95% 96% 82% 90%	133 489 33 723 398	420 686 131 809 487
HLYHK34	703776	8387	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	13.18	436	519
HLYGQ11	966539	8401	HMMER 1.8	PFAM: RNA recognition motif. (aka RRM, RBD, or RNP domain)	PF00076	4.45	96	134
HLYEA70	943886	8431	HMMER 2.1.1	PFAM: Dihydrodipicolinate synthetase family	PF00701	22.8	304	408
HLYCF37	949401	8459	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	12.84	1249	1326
HLYBX91	790234	8463	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	3.14	710	754
HLMHL66	910804	8555	HMMER 2.1.1	PFAM: Fibrinogen beta and gamma chains, C-terminal globular domain	PF00147	40.5	157	252
			blastx.14	(AF107253) angiopoietin Y1 [Homo sapiens]	gi|4378598|gb|AAD19608.1|	65% 72% 30%	157 333 41	252 365 100
HLCDA67	887375	8581	HMMER	PFAM: BTB/POZ domain	PF00651	101.9	160	504

HJPAY56	909242	8600	2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	39.9	78	146
			HMMER 2.1.1	(AC004076) R30217_1 [Homo sapiens]				
			blastx.2	gb|AAB97932.1|				
						62%	3	212
						64%	3	206
						59%	3	200
						54%	3	206
						56%	6	206
						47%	9	212
						42%	3	233
						43%	18	212
						49%	3	191
						40%	21	212
						38%	3	206
						43%	21	191
						40%	3	212
						43%	12	212
						42%	3	149
						42%	3	149
						48%	6	161
						37%	69	212
						36%	3	149
						39%	166	234
						47%	172	234
						38%	172	234
						33%	172	234
						44%	181	234
						50%	181	234
						55%	181	234
						25%	154	234
						50%	181	234

Clone	NT	SEQ	Method	Description	Accession			
						77%	208	234
						44%	181	234
						55%	208	234
						46%	190	234
HJPAA60	586675	8604	HMMER 2.1.1	PFAM: Adenosine/AMP deaminase	PF00962	78.6	96	533
HJBCZ05	925805	8611	HMMER 1.8	PFAM: TPR Domain	PF00515	12.67	205	291
			blastx.14	(AF132856) suppressor of G2 allele of skp1 homolog [Homo sapiens]	gi|4809026|gb|AAD30062.1|	88%	520	840
						98%	85	357
						58%	798	869
						25%	151	258
HHEZO92	942859	8638	HMMER 2.1.1	PFAM: tRNA synthetase class II (G, H, P, S and T)	PF00587	59.7	94	450
			blastx.14	(AC002131) Similar to seryl-tRNA synthetase 1 [Arabidopsis thaliana]	gi|3157938|gb|AAC17621.1|	62%	97	306
						47%	325	507
HHEWX06	933879	8643	blastx.14	ORF 3 [Rattus norvegicus]	gi|57053|emb|CAA29033.1|	32%	38	241
						53%	5	43
HHEPG59	925436	8681	blastx.14	IP63 protein [Rattus norvegicus]	gi|2764951|emb|CAA67705.1|	58%	251	66
						52%	541	440
						50%	346	257
HHEMG02	917366	8704	blastx.14	similar to NIFS protein (nitrogen fixation) [Caenorhabditis elegans]	gi|722379|gb|AAC46685.1|	67%	525	608
						56%	441	488
						53%	641	685
HHELA35	878217	8711	HMMER 2.1.1	PFAM: Beta-lactamase	PF00144	175.4	118	450
HHEKZ12	878267	8712	HMMER 1.8	PFAM: Beta-lactamases	PF00144	132.1	102	380
HHEAJ78	773538	8739	HMMER	PFAM: Helicases	PF00271	3.92	2	82

HHEAA02	932265		1.8	conserved C-terminal domain		87%	53	445
		8743	blastx.14	The hal438 gene product is related to a C728 protein 1	gi|559715|dbj|BAA07556.1|	60%	35	103
						88%	519	569
						100%	563	592
						100%	491	517
						88%	441	467
						58%	567	617
						57%	448	489
						25%	41	160
HFSAG03	960973	8761	HMMER 1.8	PFAM: Helicases conserved C-terminal domain	PF00271	6.39	454	365
HEOOA49	942561	8765	HMMER 2.1.1	PFAM: FAD binding domain	PF01565	115.8	1	201
			blastx.2	Aip2p [Saccharomyces cerevisiae]	gb|AAA79142.1|	73%	1	252
						50%	343	549
						42%	549	626
HEONO59	741361	8768	HMMER 2.1.1	PFAM: Fibronectin type III domain	PF00041	39.4	508	582
			blastx.2	(AF117210) host cell factor 2 [Homo sapiens]	gb|AAD27814.1|AF117210_1	99%	331	702
						97%	23	253
						97%	707	847
HEONL09	961147	8771	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	9.17	96	152
HEOMX01	913683	8778	blastx.14	alpha-3 type IX collagen [Homo sapiens]	gi|1196421|gb|AAC41947.1|	40%	349	480
						36%	328	468
						31%	325	468
						27%	316	513
						32%	331	468

Clone	ID	Method	Description	Accession	%		
					34%	328	468
					61%	241	279
					35%	328	411
					41%	337	408
					77%	241	267
					63%	241	273
					58%	244	279
					66%	306	332
					35%	185	244
					28%	394	468
HDTJF05	931977	blastx.14	polyprotein [Hepatitis C virus]	gi|464178|dbj|BAA03581.1|	53%	394	438
					47%	168	218
					50%	49	90
					60%	208	237
					75%	258	281
HDTIO74	933606	blastx.14	(AL021749) protein phosphatase 2C-like protein [Arabidopsis thaliana]	gi|2842482|emb|CAA 16879.1|	45%	148	5
HDTIO16	934151	HMMER 2.1.1	PFAM: WD domain, G-beta repeat	PF00400	117.6	164	283
		blastx.14	(AF072880) SOCS box-containing WD protein SWiP-1 [Homo sapiens]	gi|4754060|gb|AAD2 8808.1|AF072880_1	99%	2	613
					85%	610	672
					70%	686	715
HDTDP02	919572	blastx.14	(AF151872) CGI-114 protein [Homo sapiens]	gi|4929697|gb|AAD3 4109.1|AF151872_1	76%	135	212
HDTDD72	587710	HMMER. 1.8	PFAM: ATP synthase A chain	PF00119	85.33	165	350
HDTDB37	587699	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.43	201	218
HDTCC55	934923	blastx.14	(AL117483) hypothetical	gi|5911963|emb|CAB	46%	306	389

Clone	ID	Seq	Method	Description	DB match	Score	Start	End
HDTBD67	899636	8860		protein [Homo sapiens]	55956.1|	46% / 35% / 42%	453 / 4 / 105	542 / 105 / 167
			HMMER 1.8	PFAM: Laminin G domain	PF00054	53.09	615	1004
HDTBD67	902517	9731	HMMER 1.8	PFAM: Laminin G domain	PF00054	53.23	278	667
HDTAA31	937609	8871	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	12.8	1331	1408
HDTAA31	941948	9732	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	12.8	1331	1408
HDPXN01	915919	8899	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	4.29	99	146
HDPUN39	957580	8916	HMMER 2.1.1	PFAM: HECT-domain (ubiquitin-transferase).	PF00632	197.8	1783	1067
			blastx.2	hypothetical protein 2 - human (fragment)	pir|B38919|B38919	66%	1723	1070
HDPSB10	961309	8928	HMMER 2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	32.9	67	135
			blastx.14	(AF091457) zinc finger protein RIN ZF [Rattus norvegicus]	gb|AAD22522.1|AF091457_1	61%	1	252
HDPRR24	914667	8932	blastx.14	(AF086837) snapin [Homo sapiens]	gi|4206088|gb|AAD1 1417.1|	98%	144	410
HDPRJ04	909040	8934	HMMER 2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	52.4	192	263
			blastx.2	zinc finger protein ZNF132 [Homo sapiens]	gb|AAC50252.1|	40% / 36% / 46% / 47%	12 / 12 / 335 / 335	377 / 377 / 553 / 553

538	335	47%
377	18	35%
377	12	34%
574	335	41%
377	12	34%
574	335	38%
377	12	31%
538	335	44%
377	12	28%
553	335	43%
377	12	30%
574	335	37%
377	12	31%
553	335	41%
377	12	31%
538	380	49%
556	326	36%
377	12	28%
371	39	30%
553	335	36%
571	380	35%
517	335	37%
377	12	27%
553	380	34%
538	380	33%
371	93	26%
194	51	33%
611	513	36%
611	570	50%
611	534	30%
611	573	69%

Clone	ID	SEQ	Method	Description	Accession	%		
						30%	534	611
						46%	573	611
						46%	573	611
						60%	582	611
						27%	513	599
						34%	303	365
						30%	513	611
						45%	292	354
						46%	573	611
						40%	327	371
						45%	544	576
						45%	544	576
HDPQI68	955006	8939	blastx.14	(AC007258) Putative ATPase [Arabidopsis thaliana]	gi|5080816|gb|AAD39325.1|AC007258_14	42%	200	490
						41%	530	646
						60%	523	582
						54%	155	187
HDPQF03	923120	8941	blastx.14	mitogen-activated protein kinase kinase (EC 2.7.-.-) 1	pir|JE0363|JE0363	85%	700	83
						54%	771	700
						100%	803	774
						66%	823	788
HDPLT62	973945	8959	HMMER 1.8	PFAM: Neurotransmitter-gated ion-channel	PF00065	102.12	417	746
			blastx	GABA receptor rho-3 subunit precursor [Rattus norvegicus]	dbj|BAA09322.1|	78%	414	797
						92%	262	411
HDPGS45	921381	8989	blastx.14	(AC004893) similar to NEDD-4 (KIA0093); similar to P46934 (PID:g1171682) [Homo sapiens]	gi|3694664|gb|AAC62434.1|	87%	366	226
HDPGS16	909833	8991	HMMER	PFAM: Protein kinase C	PF00433	57.51	287	445

Clone	No.	ID	Method	Description	Hit	Value		
HDPFZ70	709684	9003	1.8	terminal domain		100%	236	460
			blastx.2	(AJ245709) Akt-3 protein [Homo sapiens]	emb|CAB53537.1|	100%	3	116
HDPFB03	936331	9015	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	13.5	662	745
HDPDD12	970592	9017	blastx.14	(AF043726) PHD-finger protein [Mus musculus]	gi|4529845|gb|AAD2 1792.1|	38%	341	553
HDPCM62	454740	9031	blastx.14	(AF000998) CLOCK [Mus musculus]	gi|2114488|gb|AAC5 3200.1|	86%	284	370
HCWKR86	784705	9089	HMMER 1.8	PFAM: Laminin B (Domain IV)	PF00052	2.03	152	208
			HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	2.26	296	340
HCWFA35	908820	9114	HMMER 1.8	PFAM: DnaJ, prokaryotic heat shock protein	PF00226	116.61	80	274
			blastx.14	Curved DNA-binding protein cbpA [Escherichia coli]	gi|1651491|dbj|BAA3 6142.1|	98%	68	364
HCUGN19	716989	9181	HMMER 1.8	PFAM: Alcohol/other dehydrogenases, short chain type	PF00106	8.05	98	151
HCUGL20	668913	9184	HMMER 1.8	PFAM: Ank repeat	PF00023	7.2	190	261
HCFNG10	848225	9310	HMMER 1.8	PFAM: HMG (high mobility group) box	PF00505	6.03	305	376
HCFMZ90	922112	9315	HMMER 1.8	PFAM: Beta-ketoacyl synthases	PF00109	194.57	291	872
			blastx.14	(AF021234) 3-oxoacyl-[acyl-carrier-protein]-synthase [Neurospora	gi|2522482|gb|AAB8 1078.1|	57% 56% 41%	465 255 91	824 494 306

				crassa]				
HCFMW71	920506	9316	HMMER 2.1.1	PFAM: Isopentenyl-diphosphate delta-isomerase	PF01772	55.5	198	362
HCFMJ37	955281	9321	blastx.14	homologue of yeast IPP isomerase [Homo sapiens]	gi|488750|emb|CAA34890.1|	42% 62%	198 95	407 199
			blastx.2	(AF161445) HSPC327 [Homo sapiens]	gb|AAF29005.1|AF161445_1	89% 95% 100%	203 18 610	610 83 654
HCFCG23	850426	9337	HMMER 1.8	PFAM: Core histones H2A, H2B, H3 and H4	PF00125	10.89	179	244
HBTAE84	781946	9355	HMMER 1.8	PFAM: ATPases associated with various cellular activities (AAA)	PF00004	20.81	122	232
HBMTB85	923730	9390	blastx.14	(AF093403) 2-amino-3-ketobutyrate-coenzyme A ligase [Mus musculus]	gi|4093159|gb|AAC99774.1|	93% 100% 100%	3 261 217	182 317 258
HBMBF89	912789	9415	blastx.14	Rab24 protein [Mus musculus]	gi|438164|emb|CAA80472.1|	95% 89%	287 96	412 152
HBJNB52	726475	9423	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	3.77	193	252
HBJLR37	849633	9437	HMMER 2.1.1	PFAM: Ribosomal protein S26e	PF01283	232.2	2	325
HBJLR31	900883	9438	HMMER 2.1.1	PFAM: Zinc finger, C2H2 type	PF00096	90	798	866
			blastx.2	(AF185576) POZ/zinc finger transcription factor ODA-8 [Mus musculus]	gb|AAF03152.1|AF185576_1	68% 33% 36%	606 618 66	953 893 185
HBJJX53	835733	9452	HMMER	PFAM: IG	PF00047	9.2	157	207

		1.8	(immunoglobulin) superfamily				
HBJJT12	894345	blastx.2	(AF161081) activatory receptor PIRIIbeta [Homo sapiens]	gb|AAD52965.1|AF161081_1	90% 73%	157 215	216 283
HBJIH60	930448	HMMER 2.1.1	PFAM: Homeobox domain	PF00046	64	201	371
HBJHX73	971377	HMMER 1.8	PFAM: Laminin B (Domain IV)	PF00052	1.57	181	204
		HMMER 1.8	PFAM: Laminin G domain	PF00054	13.48	931	1005
		blastx.14	contactin associated protein [Homo sapiens]	gi|1857708|gb|AAB48481.1|	50% 59% 33% 42% 43%	451 880 349 985 916	876 975 447 1041 963
HBJGT03	923800	HMMER 1.8	PFAM: Cyclic nucleotide-binding domain	PF00027	8.96	41	100
HBJFC23	423885	HMMER 2.1.1	PFAM: WD domain, G-beta repeat	PF00400	32.1	135	251
HBJAB15	660552	HMMER 1.8	PFAM: Phorbol esters / diacylglycerol binding domain	PF00130	2.72	145	171
HBDAD64	864344	HMMER 1.8	PFAM: Zinc-binding metalloprotease domain	PF00099	3.09	423	443
HBCCJ05	930956	blastx.14	(AF164612) Gag protein [Homo sapiens]	gi|5802816|gb|AAD51794.1|AF164612_1	48% 47%	444 536	277 486
HBCBN51	952057	HMMER 2.1.1	PFAM: alpha/beta hydrolase fold	PF00561	43.4	358	564
		blastx.14	similar to alpha/beta	gi|3878848|emb|CAB	40%	741	1007

hydrolase fold; cDNA EST 1	03219.1			58%	358	429
				57%	7	69
				62%	478	525
				45%	658	717
				54%	541	573

[053]   Table 2 further characterizes certain encoded polypeptides of the invention, by providing the results of comparisons to protein and protein family databases. The first column provides a unique clone identifier, "Clone ID NO:", corresponding to a cDNA clone disclosed in Table 1A. The second column provides the unique contig indentifier, "Contig ID:" which allows correlation with the information in Table 1A. The third column provides the sequence identifier, "SEQ ID NO:X", for the contig polynucleotide sequences. The fourth column provides the analysis method by which the homology/identity disclosed in the row was determined. The fifth column provides a description of PFam/NR hits having significant matches identified by each analysis. Column six provides the accession number of the PFam/NR hit disclosed in the fifth column. Column seven, "Score/Percent Identity", provides a quality score or the percent identity, of the hit disclosed in column five. Comparisons were made between polypeptides encoded by polynucleotides of the invention and a non-redundant protein database (herein referred to as "NR"), or a database of protein families (herein referred to as "PFam"), as described below.

[054]   The NR database, which comprises the NBRF PIR database, the NCBI GenPept database, and the SIB SwissProt and TrEMBL databases, was made non-redundant using the computer program nrdb2 (Warren Gish, Washington University in Saint Louis). Each of the polynucleotides shown in Table 1A, column 3 (e.g., SEQ ID NO:X or the 'Query' sequence) was used to search against the NR database. The computer program BLASTX was used to compare a 6-frame translation of the Query sequence to the NR database (for information about the BLASTX algorithm please see Altshul et al., J. Mol. Biol. 215:403-410 (1990), and Gish et al., Nat. Genet. 3:266-272 (1993)). A description of the sequence that is most similar to the Query sequence (the highest scoring 'Subject') is shown in column five of Table 2 and the database accession number for that sequence is provided in column six. The highest scoring 'Subject' is reported in Table 2 if (a) the estimated probability that the match occurred by chance alone is less than 1.0e-07, and (b) the match was not to a known repetitive element. BLASTX returns alignments of short polypeptide segments of the Query and Subject sequences which share a high degree of similarity; these segments are known as High-Scoring Segment Pairs or HSPs. Table 2 reports the degree of similarity between the Query and the Subject for each HSP as a percent identity in Column 7. The percent

identity is determined by dividing the number of exact matches between the two aligned sequences in the HSP, dividing by the number of Query amino acids in the HSP and multiplying by 100. The polynucleotides of SEQ ID NO:X which encode the polypeptide sequence that generates an HSP are delineated by columns 8 and 9 of Table 2.

[055]   The PFam database, PFam version 5.2, (Sonnhammer et al., Nucl. Acids Res., 26:320-322, (1998)) consists of a series of multiple sequence alignments; one alignment for each protein family. Each multiple sequence alignment is converted into a probability model called a Hidden Markov Model, or HMM, that represents the position-specific variation among the sequences that make up the multiple sequence alignment (see, e.g., R. Durbin et al., *Biological sequence analysis: probabilistic models of proteins and nucleic acids*, Cambridge University Press, 1998 for the theory of HMMs). The program HMMER version 1.8 (Sean Eddy, Washington University in Saint Louis) was used to compare the predicted protein sequence for each Query sequence (SEQ ID NO:Y in Table 1A) to each of the HMMs derived from PFam version 5.2. A HMM derived from PFam version 5.2 was said to be a significant match to a polypeptide of the invention if the score returned by HMMER 1.8 was greater than 0.8 times the HMMER 1.8 score obtained with the most distantly related known member of that protein family. The description of the PFam family which shares a significant match with a polypeptide of the invention is listed in column 5 of Table 2, and the database accession number of the PFam hit is provided in column 6. Column 7 provides the score returned by HMMER version 1.8 for the alignment. Columns 8 and 9 delineate the polynucleotides of SEQ ID NO:X which encode the polypeptide sequence which shows a significant match to a PFam protein family.

[056]   As mentioned, columns 8 and 9 in Table 2, "NT From" and "NT To", delineate the polynucleotides of "SEQ ID NO:X" that encode a polypeptide having a significant match to the PFam/NR database as disclosed in the fifth column of Table 2. In one embodiment, the invention provides a protein comprising, or alternatively consisting of, a polypeptide encoded by the polynucleotides of SEQ ID NO:X delineated in columns 8 and 9 of Table 2. Also provided are polynucleotides encoding such proteins, and the complementary strand thereto.

[057]   The nucleotide sequence SEQ ID NO:X and the translated SEQ ID NO:Y are sufficiently accurate and otherwise suitable for a variety of uses well known in the art and described further below. For instance, the nucleotide sequences of SEQ ID NO:X are useful for designing nucleic acid hybridization probes that will detect nucleic acid sequences contained in SEQ ID NO:X or the cDNA contained in Clone ID NO:Z. These probes will also hybridize to nucleic acid molecules in biological samples, thereby enabling immediate applications in chromosome mapping, linkage analysis, tissue identification and/or typing, and a variety of forensic and diagnostic methods of the invention. Similarly, polypeptides identified from SEQ ID NO:Y may be used to generate antibodies which bind specifically to these polypeptides, or fragments thereof, and/or to the polypeptides encoded by the cDNA clones identified in, for example, Table 1A.

[058]   Nevertheless, DNA sequences generated by sequencing reactions can contain sequencing errors. The errors exist as misidentified nucleotides, or as insertions or deletions of nucleotides in the generated DNA sequence. The erroneously inserted or deleted nucleotides cause frame shifts in the reading frames of the predicted amino acid sequence. In these cases, the predicted amino acid sequence diverges from the actual amino acid sequence, even though the generated DNA sequence may be greater than 99.9% identical to the actual DNA sequence (for example, one base insertion or deletion in an open reading frame of over 1000 bases).

[059]   Accordingly, for those applications requiring precision in the nucleotide sequence or the amino acid sequence, the present invention provides not only the generated nucleotide sequence identified as SEQ ID NO:X, and a predicted translated amino acid sequence identified as SEQ ID NO:Y, but also a sample of plasmid DNA containing cDNA Clone ID NO:Z (deposited with the ATCC on October 5, 2000, and receiving ATCC designation numbers PTA 2574 and PTA 2575; deposited with the ATCC on January 5, 2001, having the depositor reference numbers TS-1, TS-2, AC-1, and AC-2; and/or as set forth, for example, in Table 1A, 6 and 7). The nucleotide sequence of each deposited clone can readily be determined by sequencing the deposited clone in accordance with known methods. Further, techniques known in the art can be used to verify the nucleotide sequences of SEQ ID NO:X.

[060]   The predicted amino acid sequence can then be verified from such deposits. Moreover, the amino acid sequence of the protein encoded by a particular clone can also be directly determined by peptide sequencing or by expressing the protein in a suitable host cell containing the deposited human cDNA, collecting the protein, and determining its sequence.

RACE Protocol For Recovery of Full-Length Genes

[061]   Partial cDNA clones can be made full-length by utilizing the rapid amplification of cDNA ends (RACE) procedure described in Frohman, M.A., et al., Proc. Nat'l. Acad. Sci. USA, 85:8998-9002 (1988). A cDNA clone missing either the 5' or 3' end can be reconstructed to include the absent base pairs extending to the translational start or stop codon, respectively. In some cases, cDNAs are missing the start codon of translation. The following briefly describes a modification of this original 5' RACE procedure. Poly A+ or total RNA is reverse transcribed with Superscript II (Gibco/BRL) and an antisense or complementary primer specific to the cDNA sequence. The primer is removed from the reaction with a Microcon Concentrator (Amicon). The first-strand cDNA is then tailed with dATP and terminal deoxynucleotide transferase (Gibco/BRL). Thus, an anchor sequence is produced which is needed for PCR amplification. The second strand is synthesized from the dA-tail in PCR buffer, Taq DNA polymerase (Perkin-Elmer Cetus), an oligo-dT primer containing three adjacent restriction sites (XhoI, SalI and ClaI) at the 5' end and a primer containing just these restriction sites. This double-stranded cDNA is PCR amplified for 40 cycles with the same primers as well as a nested cDNA-specific antisense primer. The PCR products are size-separated on an ethidium bromide-agarose gel and the region of gel containing cDNA products the predicted size of missing protein-coding DNA is removed. cDNA is purified from the - agarose with the Magic PCR Prep kit (Promega), restriction digested with XhoI or SalI, and ligated to a plasmid such as pBluescript SKII (Stratagene) at XhoI and EcoRV sites. This DNA is transformed into bacteria and the plasmid clones sequenced to identify the correct protein-coding inserts. Correct 5' ends are confirmed by comparing this sequence with the putatively identified homologue and overlap with the partial cDNA clone. Similar methods known in the art and/or commercial kits are used to amplify and recover 3' ends.

[062]   Several quality-controlled kits are commercially available for purchase. Similar reagents and methods to those above are supplied in kit form from Gibco/BRL for both 5' and 3' RACE for recovery of full length genes. A second kit is available from Clontech which is a modification of a related technique, SLIC (single-stranded ligation to single-stranded cDNA), developed by Dumas et al., Nucleic Acids Res., 19:5227-32 (1991). The major differences in procedure are that the RNA is alkaline hydrolyzed after reverse transcription and RNA ligase is used to join a restriction site-containing anchor primer to the first-strand cDNA. This obviates the necessity for the dA-tailing reaction which results in a polyT stretch that is difficult to sequence past.

[063]   An alternative to generating 5' or 3' cDNA from RNA is to use cDNA library double-stranded DNA. An asymmetric PCR-amplified antisense cDNA strand is synthesized with an antisense cDNA-specific primer and a plasmid-anchored primer. These primers are removed and a symmetric PCR reaction is performed with a nested cDNA-specific antisense primer and the plasmid-anchored primer.

RNA Ligase Protocol For Generating The 5' or 3' End Sequences To Obtain Full Length Genes

[064]   Once a gene of interest is identified, several methods are available for the identification of the 5' or 3' portions of the gene which may not be present in the original cDNA plasmid. These methods include, but are not limited to, filter probing, clone enrichment using specific probes and protocols similar and identical to 5' and 3' RACE. While the full length gene may be present in the library and can be identified by probing, a useful method for generating the 5' or 3' end is to use the existing sequence information from the original cDNA to generate the missing information. A method similar to 5' RACE is available for generating the missing 5' end of a desired full-length gene. (This method was published by Fromont-Racine et al., Nucleic Acids Res., 21(7):1683-1684 (1993)). Briefly, a specific RNA oligonucleotide is ligated to the 5' ends of a population of RNA presumably containing full-length gene RNA transcript. A primer set containing a primer specific to the ligated RNA oligonucleotide and a primer specific to a known sequence of the gene of interest, is used to PCR amplify the 5' portion of the desired full length gene which may then be sequenced and used to generate the full length gene. This method starts with total RNA isolated from the desired source, poly A RNA may be

used but is not a prerequisite for this procedure. The RNA preparation may then be treated with phosphatase if necessary to eliminate 5' phosphate groups on degraded or damaged RNA which may interfere with the later RNA ligase step. The phosphatase, if used, is then inactivated and the RNA is treated with tobacco acid pyrophosphatase in order to remove the cap structure present at the 5' ends of messenger RNAs. This reaction leaves a 5' phosphate group at the 5' end of the cap cleaved RNA which can then be ligated to an RNA oligonucleotide using T4 RNA ligase. This modified RNA preparation can then be used as a template for first strand cDNA synthesis using a gene specific oligonucleotide. The first strand synthesis reaction can then be used as a template for PCR amplification of the desired 5' end using a primer specific to the ligated RNA oligonucleotide and a primer specific to the known sequence of the immune/hematopoietic antigen of interest. The resultant product is then sequenced and analyzed to confirm that the 5' end sequence belongs to the relevant immune/hematopoietic antigen.

[065]   The present invention also relates to vectors or plasmids which include such DNA sequences, as well as the use of the DNA sequences. The material deposited with the ATCC (deposited with the ATCC on October 5, 2000, and receiving ATCC designation numbers PTA 2574 and PTA 2575; deposited with the ATCC on January 5, 2001, having the depositor reference numbers TS-1, TS-2, AC-1, and AC-2; and/or as set forth, for example, in Table 1A, 6 and 7) is a mixture of cDNA clones derived from a variety of human tissue and cloned in either a plasmid vector or a phage vector, as shown, for example, in Table 7. These deposits are referred to as "the deposits" herein. The tissues from which some of the clones were derived are listed in Table 7, and the vector in which the corresponding cDNA is contained is also indicated in Table 7. The deposited material includes cDNA clones corresponding to SEQ ID NO:X described, for example, in Table 1A (Clone ID NO:Z). A clone which is isolatable from the ATCC Deposits by use of a sequence listed as SEQ ID NO:X, may include the entire coding region of a human gene or in other cases such clone may include a substantial portion of the coding region of a human gene. Furthermore, although the sequence listing may in some instances list only a portion of the DNA sequence in a clone included in the ATCC Deposits, it is well within the ability of one skilled in the art to sequence the DNA included in a clone contained in the ATCC Deposits by use of a sequence (or portion

thereof) described in, for example Tables 1A or 2 by procedures hereinafter further described, and others apparent to those skilled in the art.

[066]   Also provided in Table 7 is the name of the vector which contains the cDNA clone. Each vector is routinely used in the art. The following additional information is provided for convenience.

[067]   Vectors Lambda Zap (U.S. Patent Nos. 5,128,256 and 5,286,636), Uni-Zap XR (U.S. Patent Nos. 5,128,256 and 5,286,636), Zap Express (U.S. Patent Nos. 5,128,256 and 5,286,636), pBluescript (pBS) (Short, J. M. et al., *Nucleic Acids Res. 16:7583-7600* (1988); Alting-Mees, M. A. and Short, J. M., *Nucleic Acids Res. 17:9494* (1989)) and pBK (Alting-Mees, M. A. et al., *Strategies 5:58-61* (1992)) are commercially available from Stratagene Cloning Systems, Inc., 11011 N. Torrey Pines Road, La Jolla, CA, 92037. pBS contains an ampicillin resistance gene and pBK contains a neomycin resistance gene. Phagemid pBS may be excised from the Lambda Zap and Uni-Zap XR vectors, and phagemid pBK may be excised from the Zap Express vector. Both phagemids may be transformed into *E. coli* strain XL-1 Blue, also available from Stratagene.

[068]   Vectors pSport1, pCMVSport 1.0, pCMVSport 2.0 and pCMVSport 3.0, were obtained from Life Technologies, Inc., P. O. Box 6009, Gaithersburg, MD 20897. All Sport vectors contain an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, also available from Life Technologies. See, for instance, Gruber, C. E., et al., *Focus 15:59-* (1993). Vector lafmid BA (Bento Soares, Columbia University, New York, NY) contains an ampicillin resistance gene and can be transformed into *E. coli* strain XL-1 Blue. Vector pCR®2.1, which is available from Invitrogen, 1600 Faraday Avenue, Carlsbad, CA 92008, contains an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, available from Life Technologies. See, for instance, Clark, J. M., *Nuc. Acids Res. 16:9677-9686* (1988) and Mead, D. et al., *Bio/Technology 9:* (1991).

[069]   The present invention also relates to the genes corresponding to SEQ ID NO:X, SEQ ID NO:Y, and/or the deposited clone (Clone ID NO:Z). The corresponding gene can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include preparing probes or primers from the disclosed

sequence and identifying or amplifying the corresponding gene from appropriate sources of genomic material.

[070]   Also provided in the present invention are allelic variants, orthologs, and/or species homologs. Procedures known in the art can be used to obtain full-length genes, allelic variants, splice variants, full-length coding portions, orthologs, and/or species homologs of immune/hematopoietic associated genes corresponding to SEQ ID NO:X or the complement thereof, polypeptides encoded by SEQ ID NO:X or the complement thereof, and/or the cDNA contained in Clone ID NO:Z, using information from the sequences disclosed herein or the clones deposited with the ATCC. For example, allelic variants and/or species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source for allelic variants and/or the desired homologue.

[071]   The polypeptides of the invention can be prepared in any suitable manner. Such polypeptides include isolated naturally occurring polypeptides, recombinantly produced polypeptides, synthetically produced polypeptides, or polypeptides produced by a combination of these methods. Means for preparing such polypeptides are well understood in the art.

[072]   The polypeptides may be in the form of the secreted protein, including the mature form, or may be a part of a larger protein, such as a fusion protein (see below). It is often advantageous to include an additional amino acid sequence which contains secretory or leader sequences, pro-sequences, sequences which aid in purification, such as multiple histidine residues, or an additional sequence for stability during recombinant production.

[073]   The polypeptides of the present invention are preferably provided in an isolated form, and preferably are substantially purified. A recombinantly produced version of a polypeptide, including the secreted polypeptide, can be substantially purified using techniques described herein or otherwise known in the art, such as, for example, by the one-step method described in Smith and Johnson, Gene 67:31-40 (1988). Polypeptides of the invention also can be purified from natural, synthetic or recombinant sources using techniques described herein or otherwise known in the art, such as, for example, antibodies of the invention raised against the immune/hematopoietic polypeptides of the present invention in methods which are well known in the art.

[074]   The present invention provides a polynucleotide comprising, or alternatively consisting of, the nucleic acid sequence of SEQ ID NO:X, and/or the cDNA sequence contained in Clone ID NO:Z. The present invention also provides a polypeptide comprising, or alternatively, consisting of, the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X or a complement thereof, a polypeptide encoded by the cDNA contained in Clone ID NO:Z, and/or the polypeptide sequence encoded by a nucleotide sequence in SEQ ID NO:B as defined in column 6 of Table 1B. Polynucleotides encoding a polypeptide comprising, or alternatively consisting of the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X, a polypeptide encoded by the cDNA contained in Clone ID NO:Z and/or a polypeptide sequence encoded by a nucleotide sequence in SEQ ID NO:B as defined in column 6 of Table 1B are also encompassed by the invention. The present invention further encompasses a polynucleotide comprising, or alternatively consisting of, the complement of the nucleic acid sequence of SEQ ID NO:X, a nucleic acid sequence encoding a polypeptide encoded by the complement of the nucleic acid sequence of SEQ ID NO:X, and/or the cDNA contained in Clone ID NO:Z.

[075]   Moreover, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in Table 1B column 6, or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in Table 1B column 6, or any combination thereof. In further embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in Table 1B, column 6, and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1B, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in Table 1B, column 6, and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in Table 1B, column 6, and have a nucleic

acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides and polypeptides are also encompassed by the invention.

[076]   Further, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1B which correspond to the same Clone ID NO:Z (see Table 1B, column 1), or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in column 6 of Table 1B which correspond to the same Clone ID NO:Z (see Table 1B, column 1), or any combination thereof. In further embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1B which correspond to the same Clone ID NO:Z (see Table 1B, column 1) and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1B, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1B which correspond to the same Clone ID NO:Z (see Table 1B, column 1) and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1B which correspond to the same Clone ID NO:Z (see Table 1B, column 1) and have a nucleic acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides and polypeptides are also encompassed by the invention.

[077]   Further, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1B which correspond to the same contig sequence identifer SEQ ID NO:X (see Table 1B, column 2), or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in column 6 of Table 1B which correspond to the same contig sequence identifer SEQ ID NO:X (see Table 1B, column 2), or any combination thereof. In further embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1B which correspond to the same contig sequence identifer SEQ ID NO:X (see Table 1B, column 2) and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1B, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1B which correspond to the same contig sequence identifer SEQ ID NO:X (see Table 1B, column 2) and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1B which correspond to the same contig sequence identifer SEQ ID NO:X (see Table 1B, column 2) and have a nucleic acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (See Table 1B, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides and polypeptides are also encompassed by the invention.

[078]   Moreover, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in the same row of Table 1B column 6, or any combination thereof. Additional, representative examples of polynucleotides of the

1524

invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in the same row of Table 1B column 6, or any combination thereof. In preferred embodiments, the polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in the same row of Table 1B column 6, wherein sequentially delineated sequences in the table (i.e. corresponding to those exons located closest to each other) are directly contiguous in a 5' to 3' orientation. In further embodiments, above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in the same row of Table 1B, column 6, and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1B, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in the same row of Table 1B, column 6, and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in the same row of Table 1B, column 6, and have a nucleic acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (see Table 1B, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

[079]   In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1B, and the polynucleotide sequence of SEQ ID NO:X (e.g., as defined in Table 1B, column 2) or fragments or variants thereof. Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

[080]   In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1B which correspond to

the same Clone ID NO:Z (see Table 1B, column 1), and the polynucleotide sequence of SEQ ID NO:X (e.g., as defined in Table 1A or 1B) or fragments or variants thereof. In preferred embodiments, the delineated sequence(s) and polynucleotide sequence of SEQ ID NO:X correspond to the same Clone ID NO:Z. Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

[081]   In further specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in the same row of column 6 of Table 1B, and the polynucleotide sequence of SEQ ID NO:X (e.g., as defined in Table 1A or 1B) or fragments or variants thereof. In preferred embodiments, the delineated sequence(s) and polynucleotide sequence of SEQ ID NO:X correspond to the same row of column 6 of Table 1B. Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

[082]   In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1B and the 5' 10 polynucleotides of the sequence of SEQ ID NO:X are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[083]   In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1B and the 5' 10 polynucleotides of a fragment or variant of the sequence of SEQ ID NO:X are directly contiguous Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower

stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[084]   In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of the sequence of SEQ ID NO:X and the 5' 10 polynucleotides of the sequence of one of the sequences delineated in column 6 of Table 1B are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[085]   In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of a fragment or variant of the sequence of SEQ ID NO:X and the 5' 10 polynucleotides of the sequence of one of the sequences delineated in column 6 of Table 1B are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides, are also encompassed by the invention.

[086]   In further specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1B and the 5' 10

polynucleotides of another sequence in column 6 are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[087]   In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1B and the 5' 10 polynucleotides of another sequence in column 6 corresponding to the same Clone ID NO:Z (see Table 1B, column 1) are directly contiguous. Nucleic acids which hybridize to the complement of these 20 lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[088]   In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one   sequence in column 6 corresponding to the same contig sequence identifer SEQ ID NO:X (see Table 1B, column 2) are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[089]   In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of a polynucleotide sequence in which the 3' 10 polynucleotides of

one of the sequences delineated in column 6 of Table 1B and the 5' 10 polynucleotides of another sequence in column 6 corresponding to the same row are directly contiguous. In preferred embodiments, the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1B is directly contiguous with the 5' 10 polynucleotides of the next sequential exon delineated in Table 1B, column 6. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

[090]   Many polynucleotide sequences, such as EST sequences, are publicly available and accessible through sequence databases and may have been publicly available prior to conception of the present invention. Preferably, such related polynucleotides are specifically excluded from the scope of the present invention. Accordingly, for each contig sequence (SEQ ID NO:X) listed in the third column of Table 1A, preferably excluded are one or more polynucleotides comprising a nucleotide sequence described by the general formula of a-b, where a is any integer between 1 and the final nucleotide minus 15 of SEQ ID NO:X, b is an integer of 15 to the final nucleotide of SEQ ID NO:X, where both a and b correspond to the positions of nucleotide residues shown in SEQ ID NO:X, and where b is greater than or equal to a + 14. More specifically, preferably excluded are one or more polynucleotides comprising a nucleotide sequence described by the general formula of a-b; where a and b are integers as defined in columns 4 and 5, respectively, of Table 3. In specific embodiments, the polynucleotides of the invention do not consist of at least one, two, three, four, five, ten, or more of the specific polynucleotide sequences referenced by the Genbank Accession No. as disclosed in column 6 of Table 3 (including for example, published sequence in connection with a particular BAC clone). In further embodiments, preferably excluded from the invention are the specific polynucleotide sequence(s) contained in the clones corresponding to at least one, two, three, four, five, ten; or more of the available material having the accession numbers identified in the sixth column of this Table (including for

example, the actual sequence contained in an identified BAC clone). In no way is this listing meant to encompass all of the sequences which may be excluded by the general formula, it is just a representative example. All references available through these accessions are hereby incorporated by reference in their entirety.

TABLE 3

Clone ID NO: Z	SEQ ID NO: X	Contig ID:	EST Disclaimer Range of a	EST Disclaimer Range of b	Accession #'s
HAMHB21	11	961376	1 - 3744	15 - 3758	AI760827, AW408019, AI253155, AI349366, AI356482, AA814034, AW075920, AW407984, AI760691, AA251937, AI766650, AA352825, AA243541, AI934100, AA352840, H72208, H72106, AW193021, AL035530, AL035530, and AL035530.
HASAX16	12	573692	1 - 305	15 - 319	AL356513, AL356513, AL356513, AL358796, and AL358796.
HASAY74	13	526312	1 - 375	15 - 389	AC006479, AC006479, AC006479, and AC006479.
HASAY89	14	958768	1 - 849	15 - 863	AI240823, AC012580, AC012580, AC012580, AL133502, and AL133502.
HASAY94	15	521835	1 - 89	15 - 103	AL133216, AC024998, AC024998, AL365438, AL365438, AL390122, AL390122, AL133216, AL133216, AL133216, AC022702, AC022702, AC025796, AF198096, AF198096, and AF198096.
HBCAL36	16	931477	1 - 553	15 - 567	AI908374.
HBCAL39	17	964871	1 - 587	15 - 601	AL117337, AF205588, AL022345, AL022345, AL022345, AL161931, AL161931, AL354975, AL354975, AL354975, AL355583, AL355583, AL023808, AL023808, AF205588, AF205588, AL117337, AL117337, and AL117337.
HBCAM74	18	864366	1 - 437	15 - 451	AA642815.
HBCAR79	19	573989	1 - 415	15 - 429	AC021215.
HBCAS69	20	669802	1 - 274	15 - 288	
HBCAT17	21	503573	1 - 385	15 - 399	AI150061, AA382210, AC011448, and AC011448.
HBCAT63	22	573993	1 - 224	15 - 238	AI114447, AL133243, AL133243, and AL133243.
HBCBM52	23	932514	1 - 657	15 - 671	AA312172.
HBCBX12	24	861018	1 - 219	15 - 233	AB023431, AC005954, AC005954, AC005954, and AC068475.
HBCBZ05	25	922800	1 - 713	15 - 727	
HBDAC79	26	935414	1 - 612	15 - 626	AA904376, H23157, AA663798, AA359944, AA448036, R61429, H09004, AA309011, AF126245, AP001785, and AP001785.
HBDAD04	27	614849	1 - 375	15 - 389	AI057188, AW273323, C15735, AI932257, AI028587, AI940493, AW043720, AW021811, AA858079, AW197210, AI791278, AA508647, C15853, AA181800, AW043729, AW008982, AI918922, AI985340, AA031428, AA282285, AC007392, Z82198, AL031121, AL121840, L24095, AC004882, AC005529, AC002070, AC008984, AL132985, AL049781, Z72006, AC005881, AL079305, AP000263, AC006388, AC003080, AC004935, AL035667, AC005610, AP000036, AC005186, AC004842, AL035696, AC003661, AC004503, AC009263, AL023581, AC003009, U41096, AL021368, AL034350, AL031010, AJ229043, AP001069, AC006288, AL049561, AF015262, AL049833, AL034350, AP000100, AC005701, AP000566, AL023283, AC011594, AC006377,

HBDAF51	28	725481	1 - 496	15 - 510	AL031684, AC008014, AP001038, AF064864, AP001037, AF165176, AC005993, AP001043, AL078602, AC007073, AL133512, AC005367, AC007751, AC004850, AC006928, AC009028, Z83823, AC003089, AL008715, AC007372, AL049837, AL078612, AF124730, AC006032, AF207955, AC008154, AL021395, AC005076, AC005886, AC008072, AC005036, AC004783, AC004002, AC006256, AL133485, AC006353, AC002485, AF205890, AC004106, AC004169, Z74696, AC006263, AC006384, AC006972, AL031767, AC006368, AC004158, and Z95152.
HBDAF61	29	864338	1 - 794	15 - 808	N47629.
HBJAB59	30	557972	1 - 425	15 - 439	AC003963.
HBJAC23	31	529753	1 - 234	15 - 248	
HBJAG72	32	722723	1 - 504	15 - 518	AA313748, AC008013, AC006432, and Z61963.
HBJAI91	33	677397	1 - 307	15 - 321	
HBJAJ75	34	953840	1 - 301	15 - 315	AL133163.
HBJAJ85	35	675904	1 - 105	15 - 119	AC002450.
HBJAV57	36	527998	1 - 387	15 - 401	AC004976.
HBJAY76	37	527908	1 - 286	15 - 300	
HBJAY91	38	828026	1 - 276	15 - 290	
HBJBM14	39	781398	1 - 306	15 - 320	
HBJBR94	40	527903	1 - 331	15 - 345	
HBJBU55	41	527112	1 - 349	15 - 363	
HBJCD43	42	714390	1 - 187	15 - 201	
HBJCD88	43	697628	1 - 446	15 - 460	
HBJCJ68	44	823468	1 - 216	15 - 230	
HBJCO81	45	527711	1 - 290	15 - 304	
HBJCR51	46	847946	1 - 327	15 - 341	AA766781, and AA352756.
HBJCR90	47	527702	1 - 318	15 - 332	
HBJDL73	48	531104	1 - 218	15 - 232	AL117593, and AC007401.
HBJDN14	49	856216	1 - 401	15 - 415	AA249870, and AF205935.
HBJDO70	50	752830	1 - 523	15 - 537	
HBJDP32	51	573846	1 - 263	15 - 277	
HBJDP41	52	494836	1 - 374	15 - 388	
HBJDQ75	53	847935	1 - 516	15 - 530	
HBJDT05	54	932302	1 - 86	15 - 100	
HBJDT47	55	573728	1 - 214	15 - 228	
HBJDW23	56	919383	1 - 447	15 - 461	
HBJDW36	57	573847	1 - 498	15 - 512	AL078584.

HBJDX18	58	795732	1 - 544	15 - 558	T94994, and AC007546.
HBJDX51	59	716395	1 - 391	15 - 405	
HBJEA22	60	674872	1 - 312	15 - 326	
HBJEA25	61	589249	1 - 498	15 - 512	AA912740, AA48871, T99916, AA370641, AA376428, AA48891, AA091598, D81695, AA305205, AA053093, AI082436, AA779219, AI041880, AI652229, AI216294, AL037847, AA319426, AA224141, AW392797, AI240672, AA160646, AW403677, AL037869, AI240700, AA314410, U91327, AF026293, and AF026166.
HBJEA44	62	973376	1 - 447	15 - 461	T86098, and AL031589.
HBJEA65	63	934994	1 - 543	15 - 557	
HBJEA90	64	895961	1 - 739	15 - 753	AA888592, AA489084, D80258, D80014, T11417, D59503, D59627, D81111, D58101, D80064, C14227, D58246, C06015, C14407, AI557751, AI535686, AI557774, AA514184, T03048, D51079, D80227, AW377671, C14298, D80269, D59695, D80168, D59467, AI535959, D50979, F13647, C14014, D80133, AA809122, D51213, D80188, D80522, D80043, D80378, D45273, D59502, D52291, D80195, AA305578, C03092, C15076, D80164, D59275, D80038, C14389, C14331, D80247, D80157, D81026, D51799, D80439, D51103, H67854, D80251, D58283, D80949, AA514188, D59859, D59610, D80022, D80166, D51423, D59619, D80210, D80391, D80240, D80253, D80045, C14344, D59787, D50995, AA305409, D59551, D81030, D80212, D80268, D80366, AW367950, D80196, D51022, H67866, D80219, AW178893, D57483, D80193, D59927, D80248, D59889, D51759, D80302, AW360834, D51060, D59317, D80241, D80024, AA514186, D59474, D45260, D60214, C14973, AI525237, AW177440, D51221, T03116, D59653, C14429, AW378539, AI525917, AW360817, C75259, AI525920, D60010, C14077, AW177505, AW375405, D59373, C14957, AI525227, AI525242, AW360811, C14046, C16955, C05695, AW178907, AI525923, AW178908, D80228, AI525235, T02868, AW366296, AW178906, AW360844, Z33452, AA285331, T03269, AI525912, AW179328, T48593, Z21582, AW375406, AW378534, AI525925, AI525215, AW179332, AW377672, AW360841, AW179023, AW178905, AW177731, AW378528, AW178762, AW179019, AW378533, AW378532, AW352120, C05763, AW352117, T02974, AW377676, AW178914, C04682, AW378542, AW360855, AW178774, AW176467, N66429, D51053, AW179020, AW352171, AW178980, AW352170, D51250, AW177733, AW378525, AW179024, AW352163, AI525222, AW179018, C13958, D31458, AW178781, AI535961, AI525928, AW378543, AW177728, AW369651, AW178986, AW177456, AW178911, AW378540, Z30160, AW178775, AW178909, AW179004, AW179329, AW179009, AW178754, AW352158, AI525228, H67858, AA305720, AW177508, AW177734, AW177497, AW179012, AI910186, AW177722, AI525216, AI525238, AI535665, AI525903, AB002449, AR016808, A82595, A84916, AB028859, AR060385, AJ132110, AR008278, AF058696, A62300, A62298, AR018138, I14842, AR054175, I50126, I50132, I50128, I50133, AR008277, AR008281, X64588, X68127, A70867, AR062872, I82448, I79511, AR016514, X67155, Y17187, AR060138, A45456, Y17188, A94995, D26022, A26615, AR052274, A43192, Y12724, A63261, A43190,

Name	No.	ID	1‑Range	15‑Range	Accessions
HBJED66	65				AR038669, A25909, A64136, A68321, AR066488, AR008443, Y09669, AR066487, AR67220, D89785, A78862, D34614, A30438, AF123263, AR016691, AR016690, U46128, D88547, AR032065, AJ000347, D50010, AR008408, and AR060133.
HBJEE29	66	787251	1‑161	15‑175	AA360671, and AL035652.
HBJEE30	67	888625	1‑511	15‑525	AA806058.
HBJEH70	68	531103	1‑413	15‑427	
HBJEI42	69	971161	1‑65	15‑79	
HBJEJ21	70	669495	1‑410	15‑424	
HBJEJ29	71	671201	1‑291	15‑305	AC002126.
HBJEJ83	72	693490	1‑411	15‑425	AA760836, and AW085046.
HBJEO29	73	847920	1‑414	15‑428	
HBJEP15	74	693491	1‑323	15‑337	AC005580.
HBJEP73	75	847843	1‑363	15‑377	
HBJER19	76	764573	1‑320	15‑334	
HBJES44	77	953804	1‑249	15‑263	W72060, W76253, AW291566, AI360806, AI871850, and AF086367.
HBJET76	78	715846	1‑608	15‑622	AA625290, and AI394096.
HBJET94	79	527553	1‑648	15‑662	AL133485.
HBJEW15	80	794343	1‑258	15‑272	
HBJEZ09	81	507534	1‑650	15‑664	
HBJEZ16	82	573781	1‑276	15‑290	
HBJEZ39	83	421567	1‑350	15‑364	
		690479	1‑320	15‑334	T11506, AA490380, AA280331, AA233664, AA233243, AA232989, N49790, AI886810, AI660641, AI707610, AA243850, AA001344, AI814340, AI718247, AA897648, AA714834, AI499266, AI190321, AI833024, AI718088, AI718693, AI014672, AI091271, AW169874, AI078790, N52465, AI245448, AA811481, AI057060, AA744777, AA642417, N49687, AA233550, and AI222478.
HBJFC51	84	725818	1‑484	15‑498	AA303049, AA482928, F30650, AI915081, AA349606, AA832175, AW104788, AI962030, AA237098, H29914, AL119555, AA599423, AA878431, AI452836, AA613624, AW117860, M62259, AI659023, AA719523, AA632479, AA643770, AA632556, AI144081, AW302711, AW301906, AW302753, AA127426, AA493503, AA173342, AA664604, H69515, AI053560, N90460, AA837000, AA481887, AA804187, AA720732, H86106, AA394066, AI865807, AI701959, AA467988, AA586656, AA468051, AA992877, AA911515, AA515728, AW068316, AW188742, AI369580, AI354847, AA323085, C16659, AA995827, F24728, R98218, AA302817, AI653776, AA492313, AC003007, AC005632, AL133163, AC007371, AC007011, AL121754, AC005011, AF001549, Z98304, AC004383, AC006312, AC005696, AC005488, AC005412, AC006088, AL049778, AI049636, AL021937, AC006515, AL049636, AC004887,

HBJFJ53	85	573806	1 - 412	15 - 426	AL034417, AC004796, AC004895, AL121757, AL031587, AC006141; AL049829, AC002492, AL022345, AC012384, AC005484, AC005520, Z83844, AR036572, U91328, AC002302, AC004050, Z95114, AF001550, AL035079, AC004682, AL034421, AC005041, AL109627, AC002531, AC006432, AC002310, Z95115, AC004148, AC004671, AL121603, AL109952, Z92542, AJ010598, AC005808, AL022726, AC005300, AC004584, AC005874, AF134471, AC006117, AL049776, AC005089, AC004686, AC004941, AC005037, AC005049, M63796, AF050154, S42653, AC005015, AC003043, AL033527, AC006254, AC016830, Z77249, Z95116, AC005291, AL031672, AC006530, Z86090, AC002351, AL031577, AL096712, AC004106, AC004622, AC006077, AC005902, AC006111, AC006115, AF111169, AC005881, AC003109, AC016027, AC005088, AC006208, AC007546, AC003681, Y14768, AC007055, AC005839, AL078639, AL080243, AC010197, AC006013, AP000505, AC006112, AL020993, AC006387, AC000082, AL031005, AL035683, AL049589, Z98742, AC006241, Y18000, AC005932, AC007676, AF053356, AL022238, AC007314, AL031680, AL022328, AL034429, AC006101, AC008372, AC005377, U95742, AC005231, AL121652, AC006480, AL031118, AC002365, Z83840, AC010170, AC007421, AF042090, AC006454, AL021940, AC009247, AC002119, AL022336, AC004815, AC007386, AC004531, Z97055, AL022302, AL022322, AP000547, AC006035, AL035405, AC004042, AC007216, L44140, AL031281, AJ246003, AL049874, AC007637, AC000120, Z77852, AL035530, Z83826, Z99128, AL096702, AC005305, AL121655, AC006441, AC002425, AL049843, AL031666, AL049872, AF134726, AC005562, AC007461, AC003353, AP000503, AL079342, AC004491, AC004797, Z97054, AL022320, AC005046, AC002553, AF196970, AC006121, AC005754, AC006486, AC004859, AC009069, AC005746, AL008730, AP000251, AL049697, AC006449, AC007993, Z81369, AC003093, AL021154, AF207550, AC012331, AL034451, AP000030, AP000134, AC005971, AC006011, AL133246, AL132985, AC000097, AC007878, AC005261, AL079295, AL031602, Z98949, AC004694, AC005288, AC006014, AC006547, AC006539, AP000558, AC005104, AC008044, AC004837, AB018307, AC004883, AC006360, AC003950, AC007406, AL021707, AC007773, AL121658, AP000692, AL035458, AL033392, AC004254, AL034548, AC003010, Z75888, and AC004611.
HBJFK55	86	625315	1 - 359	15 - 373	R94150, and T86024.
HBJFL49	87	573970	1 - 417	15 - 431	
HBJFP58	88	738298	1 - 92	15 - 106	
HBJFV07	89	953795	1 - 122	15 - 136	
HBJFV59	90	573747	1 - 469	15 - 483	AI762503, AI076416, AI243035, AI077308, AA700764, AA838319, AA868956, and AA187478.
HBJFW10	91	878778	1 - 405	15 - 419	AL133241, and U80460.
HBJFW19	92	573765	1 - 339	15 - 353	
HBJFW20	93	573755	1 - 315	15 - 329	AC004692, and AL031684.
HBJFW50	94	571351	1 - 276	15 - 290	

HBJFW55	95	526682	1-259	15-273	AA283995, AI478915, AA283951, AI817564, AA283760, AA287165, AA286859, AA789104, and AC007068.
HBJFW68	96	573766	1-172	15-186	
HBJFW78	97	571347	1-380	15-394	
HBJFX57	98	573760	1-305	15-319	AL078584.
HBJFX81	99	529843	1-227	15-241	
HBJFY40	100	574095	1-450	15-464	
HBJFZ21	101	671191	1-235	15-249	
HBJFZ40	102	526679	1-437	15-451	
HBJFZ56	103	507530	1-329	15-343	
HBJFZ82	104	799685	1-325	15-339	AW005281, and AA558937.
HBJGR59	105	739095	1-551	15-565	
HBJGT72	106	957668	1-354	15-368	R50003, and R50021.
HBJGT92	107	919507	1-722	15-736	T84928.
HBJGU70	108	864063	1-474	15-488	
HBJGU78	109	920821	1-568	15-582	AI53853, AW079768, AI683616, AI536991, AI254730, AI356243, AI630887, AI829696, AI889334, AI344419, AW411027, AI391729, AI926804, AI282481, and AC004031.
HBJGV17	110	662725	1-475	15-489	
HBJGV22	111	613781	1-280	15-294	AA382068, D54550, H62431, H13929, AW176445, H80318, AW374298, AA418306, D54133, W01672, AL048935, AW374306, AW374317, W27179, AW176444, AW374310, W28706, AA234625, AR064426, AB004788, AF079221, AF067396, and AL132665.
HBJGV32	112	699075	1-377	15-391	
HBJHG04	113	836184	1-419	15-433	
HBJHG76	114	970826	1-476	15-490	AC008282.
HBJHI28	115	686278	1-314	15-328	M62004, and AL035410.
HBJHJ44	116	621723	1-359	15-373	AA207226, AL121444, AA019182, AA333455, W96231, AA331923, H08904, AA446987, and AW167577.
HBJHM50	117	724183	1-336	15-350	
HBJHM57	118	973257	1-419	15-433	
HBJHM76	119	715512	1-324	15-338	
HBJHN52	120	726570	1-334	15-348	
HBJHO11	121	964943	1-522	15-536	AW006288, AA977097, AI368637, AW197236, AI341105, AI650705, AI816278, AI590528, and R44511.
HBJHO60	122	975186	1-395	15-409	AL121820.
HBJHR56	123	686717	1-592	15-606	AA077952, AA482768, R96657, H79151, AW103981, AA169194, AA325699, M78177, AA626678, T69877, AA569387, AA332991, AA323749, AA326441, AA975645, AA357937,

HBJHT32	124	488736	1 - 321	15 - 335	AI434706, AA491762, AA568331, N29941, AW419262, H92005, AI000800, AA847509, AA973803, W95976, AA650623, AA862181, W95841, N87420, AA523837, AA693370, AA446657, AA630362, R38154, AL120483, AL138455, AI865400, AI184354, AL110444, AL039958, AI799642, N84245, R67504, Z98473, AW152064, AI051230, AA377730, AA780929, AI056964, AW338754, AA563818, AA587604, AI348611, N22424, AA704391, AI270343, N70103, N70020, AF041058, AC005745, AC007666, AF054569, AF042835, AF045999, AC007999, AC004938, AC004098, U66059, U07563, AC004821, AC002073, AC003101, AC004447, AL078475, AF009660, AC005166, AC006538, AC002286, AC005781, AC004854, AC005523, AC005940, AC002550, AP000961, AI003147, AC000094, AC005838, AC000085, AC005023, AP000553, Z69366, AC007106, AC005815, AC016025, AF010238, AC007845, AC004972, Z49237, AP000404, AL021393, AC005409, AC003041, AL031680, Z93241, AL034402, Z84572, AC005632, U67825, U67826, AC004253, AC005414, AP000555, AC002347, Z82198, U67829, AL031774, Z60740, AC005031, AF044101, AP000350, AP000111, AP000043, AC001050, AC016026, AC006141, U80017, AC001228, AC010197, AC001531, AC007226, AC005015, AC010209, AC004895, AC006312, AL031283, AC005081, AC005291, AC004812, AF129107, AL096761, AL023579, AF051934, AL024507, AC008170, AI229042, AC005531, AC007878, AC009516, AL035681, AC006128, AL035417, AF207550, AC003998, AL121653, AP000705, AC006581, AC008045, AL035249, AC002985, AC010077, AF091512, AC003086, AC002429, AL008582, and AC000385.
HBJHV93	125	881606	1 - 348	15 - 362	H68571, AA641767, and AA223840.
HBJHX08	126	958970	1 - 636	15 - 650	AL117342.
HBJHZ03	127	923733	1 - 491	15 - 505	
HBJHZ08	128	958969	1 - 373	15 - 387	
HBJIA19	129	920881	1 - 678	15 - 692	AA773280.
HBJIA92	130	494812	1 - 324	15 - 338	
HBJID21	131	670642	1 - 415	15 - 429	AA524953, AI418334, AI079663, and AI807855.
HBJID81	132	697594	1 - 433	15 - 447	AA864727.
HBJIL11	133	966701	1 - 414	15 - 428	AC007564, and AL049766.
HBJIL31	134	847865	1 - 527	15 - 541	
HBJIL53	135	971136	1 - 524	15 - 538	
HBJIL75	136	698405	1 - 399	15 - 413	
HBJIL88	137	721859	1 - 475	15 - 489	
HBJIO70	138	725097	1 - 424	15 - 438	
HBJIO79	139	774812	1 - 486	15 - 500	AI797163, AA761740, and AI278601.
HBJIR58	140	735365	1 - 330	15 - 344	AC002470, and AC007308.

HBJIY20	141	669519	1 - 148	15 - 162	AR050541.
HBJIY86	142	725084	1 - 652	15 - 666	AC007488.
HBJIB02	143	919379	1 - 435	15 - 449	
HBJIB04	144	878974	1 - 448	15 - 462	AC007319.
HBJIB11	145	965016	1 - 424	15 - 438	N27511.
HBJIB15	146	659920	1 - 512	15 - 526	
HBJIB26	147	681342	1 - 359	15 - 373	AI886860, R17495, H96146, AA582791, AA069643, W02625, AA745628, T51436, AA593092, AI955111, AW169038, AI538214, N32496, AA243974, AA244061, AA629731, AA737235, AA745653, AI343169, W24944, H39038, AA856904, AA324108, T62233, AA279649, AA188676, AW410201, AI671077, W03120, AI570237, AA187624, AW404337, AA848002, AI418661, H81267, AA229422, F23294, T26476, AA523695, AA032001, AW341741, F30158, R32162, AA179304, AA452325, AA668715, AA215470, AC004644, AC006111, AC005618, Z95331, AC006146, AC002312, AL021918, AC005089, AC005086, AC002381, AL031295, AC004687, AC008101, U91322, AC016027, AC005874, AF134471, AC016830, AC005081, AF047825, AC006449, AC007425, AI049709, AL132777, AC005730, AC002352, AL031311, AC009946, Z83819, AC003108, AC004970, AC003982, Z98884, AC005969, AC006006, AL121658, AC005015, AC008079, AC004216, AC005193, AC007546, AC007731, AL139054, AC006241, AL121825, AC006312, AP000504, AL133485, AC005500, AC004794, AC002544, U95739, AC003098, AP000103, AP000032, AL133243, AL021155, AF129756, AC004253, AC006581, AC005921, AL035681, AL022165, AL109758, AC007227, AL021391, AF111169, AC006130, AC005666, AF196972, AC007537, AL096701, AL050332, AL022334, AL096678, AC006084, AP000216, Z98751, AC002301, U15422, AL034402, AC006251, AC003037, AL035684, AL034418, AC005006, AL121653, AF196779, AC006211, AL078593, AC005531, AC005237, U73634, AC007566, AC002126, AF064861, AC005562, Z83843, AC002565, AC006040, AC000379, AL021026, AC005018, AL035460, AC005317, AC007376, AC004883, AC005037, AC004821, AC005971, AF001550, AC002404, AL109865, AC005207, AL031584, AC000035, AC005332, AC004938, AB020864, AL133163, AP000694, AC003661, AF003626, AC005486, AP000516, AC004876, AL035086, AL135744, AC005815, AP000514, AC005663, Z98752, AL049780, AC007055, AC006441, AC005377, AC008372, AC009510, AL031778, AC005664, AF111168, AC005907, AL031281, AC005620, AL021707, AF126531, AC020663, AL022302, Y14768, U91321, AL109967, U91327, AC000025, AC004150, U63630, AC003072, AC005048, AC005544, AC007011, AL031673, AC004542, AC002316, AL022336, AF053356, AP000043, AC006132, AP000553, AF195658, AC004647, U91323, AC005082, AL133448, AL109952, Z97055, Z93017, AP000030, AP000111, AC004647, U91323, AC005082, AL133448, AL109952, Z97055, Z93017, AP000030, U07000, AC005768, AC019014, AL049832, AC007774, L78833, AC003119, Z84480, AC002365, AL121655, AC004223, AC005839, AC000353, U80017, AC005325, AL020997, AC005829, L78810, AC005632, AC005821, AL035413, Z69719, X69908, AC004933, AC002310, AC004983,

HBJJB40	148	710873	1 - 519	15 - 533	AL022326, AC008041, AC007283, AC007510, AC005180, AC008115, AC004895, AC005192, AC005378, AC005484, AC004804, AC006974, AC005527, AP000704, AC012398, AC005291, AC004813, AC005696, AC005070, AC004000, Z69705, and AL031685.
HBJJB61	149	741615	1 - 369	15 - 383	AI205547.
HBJJB62	150	743096	1 - 422	15 - 436	
HBJJB74	151	765406	1 - 426	15 - 440	
HBJJB78	152	489438	1 - 390	15 - 404	AA076977, and AA076965.
HBJJD31	153	691780	1 - 452	15 - 466	R58828, AP000556, and AP000557.
HBJJD90	154	712982	1 - 435	15 - 449	AL035090.
HBJJH48	155	721473	1 - 357	15 - 371	
HBJJN13	156	915977	1 - 414	15 - 428	W93924.
HBJJQ29	157	666221	1 - 384	15 - 398	AA566068.
HBJJS46	158	718894	1 - 589	15 - 603	
HBJJU62	159	664298	1 - 415	15 - 429	
HBJJU81	160	671611	1 - 375	15 - 389	AW449043, AA515418, E15648, E15652, and E15653.
HBJJX04	161	949592	1 - 917	15 - 931	AI343473, AW294828, AI521275, and AI797793.
HBJJX11	162	847854	1 - 403	15 - 417	
HBJJX44	163	657242	1 - 561	15 - 575	T55674, N32741, and AL110337.
HBJKA75	164	682250	1 - 233	15 - 247	AA357979, AA357978, AA078137, AA078184, H63953, AI431513, AL036665, AA572974, AA626840, AA744095, AA774006, AI561043, AW029269, AI928890, H63220, AL037927, AA744423, AW105463, AA626595, T49133, AW151761, AA484191, D82321, AA513884, AW019964, F30158, AA317261, T51436, AA745628, AA515351, AA587826, AA573062, N34689, AA666066, AA053463, AA640252, AA434346, AA808847, AA669747, AI479148, AA478602, AA657374, AA564582, AI370170, AA599749, AA713705, AA653638, T06576, AA015948, AI635440, F32213, AA826102, AI860535, AW128881, AI590404, AW419389, AA741301, N30650, AW379218, AA610433, AA568314, H65308, AA699517, AI362694, AW151541, AA302978, AW085790, AW272815, AL079734, AI811647, R81176, AA653985, AW069412, U91320, AL121825, AC006065, AC006538, AL109827, Z98051, Z79997, AL078611, AC005081, AC005015, AC002457, AC003037, AC007057, AC005534, AC005037, Z99128, AC002316, AC005696, AC005192, AL035089, AC005772, AC005253, AL024498, AC005562, AL008715, AC005184, AF196779, AL122020, U96776, AL096677, AL109847, AC004815, AC002456, AC005231, Z83820, AC005284, AC004158, AL031594, AF207550, AC003969, AC010200, AL109865, AC003973, AC005214, AL031776, AC007129, AL050318, AF121781, AC004797, AC006312, Z99716, AF053356, AC002073, AC004531, X64467, AC005031, AP000008, AL049570, AP000704, AC005828, AL031433, AC008115, AF001905,

Clone	No.	ID	Range 1	Range 2	Accessions
HBJKC52	165	974123	1 - 494	15 - 508	AC007363, AC004967, L77036, AL078463, AC004036, AL050348, AL022718, AC007193, AC004805, AL133353, AC009509, U77078, U77080, U73330, Z49235, AC004975, AF111170, AC009542, AL135744, Z83826, X81637, AL049590, AC005212, Z84482, AC004167, U80017, AC004589, AL024474, AL035694, AL031672, AC005921, AC007736, AL049869, AC005014, AC002433, AP000142, AL022326, AL049743, AC000379, Z99291, AP000081, AC005800, AC006000, AC003085, AC004843, AC002312, AC011331, AC006039, AC005726, Z97030, AL008635, AL020997, AC007371, AL035397, AL049872, AP000358, AC006126, AC005808, AL031284, AC002364, AL132985, AC007421, AL023513, Z68285, AC007191, AL096761, AL022320, AF124730, AC005532, AL035685, AC005294, AL022577, AL031719, AL031602, AC004973, AC004223, L78810, AC002994, AC005105, AC007073, AL109963, AC005625, AC004816, AC007546, AC006450, AF109907, AF001552, AL021154, AC004585, AC005071, AC006441, AC005157, AC007041, AC004491, AC004605, AC018725, AC006276, AC002984, AD001527, AC002128, AP000252, AL132799, AP000212, AP000134, AP000030, AC005006, AC005865, AL049631, AC007880, AC006560, AC007225, Z98941, AC004659, Z98941, AC004686, AC004020, AC006213, AC005243, AC004887, AC004692, AL133216, D87675, AP001054, AL024494, AC005781, AC004901, AC005972, AC004001, AP000694, AL109627, AC004835, AL049709, AL031985, AL034549, AL121652, AL022336, Z84479, Z98742, AC002301, AC005232, AF057280, AL031680, AC009330, AL117338, AL035681, AC005531, U96629, AC018633, AL009031, AC004103, AC005220, AL022322, AC004168, and X06828.
HBJKC56	166	735812	1 - 287	15 - 301	AI032590, AI568523, AA015921, AA020884, R08692, W01056, AI918922, AL049648, AC004805, U91322, AI079304, AL023581, AC005611, AC005243, AC007298, AL031056, AC000004, Z98884, AL049830, AP000246, AP000129, AP000207, AC005579, AC004525, and AC013256.
HBJKC86	167	974121	1 - 514	15 - 528	T96742, and H52012.
HBJKD68	168	676330	1 - 238	15 - 252	
HBJKE63	169	744847	1 - 369	15 - 383	
HBJKF06	170	935033	1 - 589	15 - 603	AW241714, and AA927828.
HBJKF86	171	714449	1 - 494	15 - 508	
HBJKI26	172	489160	1 - 516	15 - 530	W87882.
HBJLB78	173	588085	1 - 317	15 - 331	
HBJLC51	174	784830	1 - 865	15 - 879	AW451973, AI766808, H88067, AA477171, AI376202, AA760752, AA781175, AW173607, AA992090, AI654796, AA946869, and H88069.
HBJLD57	175	683265	1 - 460	15 - 474	
HBJLD73	176	765356	1 - 408	15 - 422	AA465326, and AL031733.

HBJLE82	177	735748	1 - 474	15 - 488	
HBJLF58	178	864013	1 - 226	15 - 240	
HBJLL07	179	952791	1 - 273	15 - 287	
HBJLL13	180	656721	1 - 291	15 - 305	
HBJLL18	181	665874	1 - 329	15 - 343	
HBJLL28	182	847840	1 - 340	15 - 354	AA483929, AI499588, N57739, AA664548, AA493136, AI524360, AI791913, AI821714, AA482273, AW023990, T06754, AA455670, AA630672, AA501649, AA961035, AA579179, AA837087, AA533782, AA487888, AW438542, AA503298, AI821785, AW023149, AI223700, AW149313, AA588001, AA618452, AI473475, AA662976, AW270343, AI933714, AI431240, AA858372, AW148507, R31790, AA857370, AW196064, AA339692, AA580808, AA864261, AA502991, AW238605, AA370455, AI580250, AA507282, AI648410, AI587224, AA483771, AW270709, AA595499, AA516233, AA828062, AA501852, AA719073, AI470646, AA846935, AA297666, AI859438, N23504, AI683446, AA436774, AL138096, AA002063, AA635368, AL042927, AI874308, AA654661, AA610688, AA436782, R23521, AA515905, AA502440, AI696595, AA071334, AA621381, AI921043, AA468505, AW341978, AI792133, AA230213, AA643770, AA651632, AL036037, AI354388, AI754544, AA707782, AA707705, AI341571, AA833896, AA282820, AA833875, AI733856, AA780944, AA503119, AI754567, AA483223, H25921, AI755214, R23441, AI691091, AA493975, AA368573, AI056177, AA522642, AL038971, AA513893, AA653375, AL044586, AA687535, R73754, H29019, AA634837, AL047429, AA209423, AI587565, AI587583, AW302080, AI253007, AW081194, AW302087, AI434695, AA077019, AC004257, AC005696, AC016830, AC005060, AC006313, AC005071, AC003070, AF111168, AL049779, AL031447, AF047825, AC004659, AC006120, AC004148, AL133246, AC016027, AC007191, AC005002, AC005527, AP000556, AP000252, AC003029, AP000552, Z82180, AC003690, AC005226, AC004832, AC004883, AC005581, AC005387, AC004999, AL121653, AC004884, AC006312, AC005519, AC007842, AC005003, AL033518, AP000557, AL096701, U82828, AL049653, AP000703, AL121595, AC006251, AP000116, AP000049, AC007277, AC004638, AC005914, AL035422, AL050318, AC005880, AP000121, AP000053, AC005939, U47924, AL110502, Z97054, AC006112, AC005317, AL135744, AP000311, AC003663, AL049761, AC004953, AC004019, AC002116, AC005694, AC006487, AC005512, Z95115, AL021807, AL049745, AC007011, AC002301, AC005231, AC002375, AC006978, AP000066, AP000558, AC012384, AL109984, AC005197, Z75746, AF001549, AL031228, AC004814, AC006285, U82668, AP000513, AC005529, AL021940, AC005971, AC002310, AC006208, AP000244, AF111169, AC005899, AC005280, AC005049, AC006441, AC002531, AL049776, AC020663, AC007172, AL022165, AC004675, AC005031, AP000251, U91326, AC004149, AC003024, AF165926, AC006530, AJ003147, Z85999, AL023553, L77570, AL049589, AC009247, AC005305, AC005790, AL109798, AC007193, AC005730, Z84483, AL034451, AC002492, AC004983, Z84466, AC004706, AC004450, AP000355, AC005181,

Clone	SEQ ID		1-range	15-range	Accession Numbers
HBJLL57	183	734522	1 - 322	15 - 336	AF088219, AC006581, AC002543, AP000065, AC007546, Z93942, AC005856, Z85996, AL080317, AP000689, AC005409, U89335, AL031673, AP000030, AJ133269, AC004812, L44140, AC000159, Z98036, AB023052, AF196969, AJ010770, AC002470, Z83844, AC004686, Z82214, AC000134, AC003982, AL078477, AC009516, AL035420, AP000692, AC016831, AC005399, AC009399, L78810, AC005531, AC005089, AC005800, AC004655, AL049699, AL033543, AC006137, AC002041, AC000025, AL049757, AC004383, AC007387, U91323, AC007227, AP000512, AC007262, Z98884, AL133448, AL049759, AC007114, AL033522, AF043945, AC006211, AC007656, AC004955, AC004263, AF129756, AL022721, AC005598, AL031255, AC005765, AL049872, AL031983, Z85986, AL035684, AC007371, AC008040, AC003043, AC008132, AL022323, AC005520, AC005480, Z98051, AL049760, AL080243, AC004815, AL022316, AC005037, Z83846, AL023807, U80017, AC002472, AL133163, AC007919, AC006453, U91325, AC005535, AC005940, AC000353, AC005209, AL022396, AL008582, AP000503, AC005740, AC002996, AC007785, AC006026, AC005081, AC004448, AC007686, AC006040, AC016026, AC002395, AC004848, AC005234, AC002070, and AL139054.
HBJLL68	184	752810	1 - 332	15 - 346	
HBJLP14	185	657747	1 - 341	15 - 355	
HBJLR56	186	843811	1 - 882	15 - 896	AA075481, AA075480, AA075067, AI791780, AA127140, J04716, L39879, L01122, M73706, S89400, K01930, J02741, U75408, W38303, AA076112, and AA076111.
HBJLR82	187	779004	1 - 354	15 - 368	AW239537, AA232075, W78769, AW020962, AA448818, AA128583, and AJ010842.
HBJLV29	188	823400	1 - 374	15 - 388	AI797543, AA121152, AW189950, AA281969, AI082147, AI034184, AI871347, AA815173, AW418773, AA579808, AI468532, AI290248, AA458860, AA227296, AA573302, AA702437, AA278877, AA227295, AI458479, AI802340, T07432, Z39708, AI985569, T85327, AA659414, AI027853, AI766719, AA350191, AA904439, T16811, and AC004798.
HBJMA30	189	661665	1 - 646	15 - 660	T87986, and AA814273.
HBJMA51	190	725095	1 - 179	15 - 193	
HBJMC53	191	726491	1 - 454	15 - 468	
HBJMD71	192	760155	1 - 531	15 - 545	
HBJMD74	193	975088	1 - 467	15 - 481	AW206211, AF150250, C14388, AC002045, AC006241, U52111, AC002554, AC004491, AF047825, AC005086, U95739, AF111168, AC007285, U80017, AL031602, AL121655, Z97054, AC004893, AC005874, AF134471, AC007993, Z85987, AC003104, AC000134, AC007919, AC004692, AC008115, AC005363, AC005822, AC005300, Z94801, AC002128, AC003029, AL034429, AL034034, AC005088, AC005914, U96629, AC005534, and M18157.
HBJME92	194	792110	1 - 426	15 - 440	AA126910, AP000360, AC000053, AC002060, and AC005002.
HBJMF23	195	675692	1 - 379	15 - 393	

Gene	SEQ				Accession Numbers
HBJMF30	196	691179	1 - 566	15 - 580	
HBJMF47	197	720050	1 - 374	15 - 388	
HBJMI76	198	720047	1 - 425	15 - 439	
HBJMK34	199	935952	1 - 443	15 - 457	AW182540, AA610084, AI936489, AA306791, AW340569, AA905749, and AB033050.
HBJMK94	200	794129	1 - 438	15 - 452	AW004683, H87822, H87851, and AW015156.
HBJML28	201	614911	1 - 465	15 - 479	AC004254.
HBJML69	202	864004	1 - 662	15 - 676	AL031657.
HBJMM72	203	760833	1 - 408	15 - 422	AI241023, AW401921, and AB023483.
HBJMN75	204	699060	1 - 448	15 - 462	AC002368.
HBJMQ86	205	576429	1 - 513	15 - 527	H55415, W22115, AL096701, and AB011114.
HBJMR15	206	964484	1 - 493	15 - 507	
HBJMR60	207	740142	1 - 601	15 - 615	AA601336, AA640305, AW341878, AI567676, H79323, AA593168, AW020612, AA167656, AW085626, AA729004, N27362, F35374, N49298, AA179364, W45416, AI520984, T89141, R99617, AI253347, AI918661, AI061158, AI281622, AA947352, AA228268, AA664963, W27084, AA761454, F01694, T57636, AA299490, AI744890, N63562, AI640905, AI919048, H81012, AI569452, AA828840, AI828721, AA496042, AW028376, AI343808, AA776663, AA428991, AI363336, AI149177, AL049743, AF165926, Z83840, AL109984, AI031311, AC005412, AC004821, AC007686, AC007546, AC007207, U85195, AC005377, AC007421, AC008115, U95742, AE000658, AC004832, AL035587, L78833, AC007216, AL020997, AL031589, AC004797, AC005520, AL035420, AF196779, AF139813, Z98200, AL033392, AC003025, AL035086, AL080243, AL121655, AC006530, AC005355, AC002312, AI246003, AC004228, AC004895, AC005180, AL096791, AC006312, AP000512, AC005519, AC006285, AC005081, AL049869, Z82190, AC005839, AC005015, AL049694, AC004816, AC006071, AC005726, AC002120, AL031293, AC005089, AC006121, AL021453, AC005527, AC005696, AC006139, AL135744, AL133163, AF217403, Z97630, AC005971, AL035422, U78027, AC004878, AC004975, Z82176, AF023268, AC000025, AL121603, AL008582, AL049757, AF001549, AC005399, AC005914, AC007387, AC005207, AC000048, AF207550, AC005821, AC002094, AP000248, AC005876, AC002117, AC005231, AC005288, AL034429, AC006130, AF111167, AP000704, AL133448, AL096701, AC007386, AF111168, AC005529, AL031280, Z98884, Z73979, AF134726, AC004099, AC006581, AF051976, AC006160, AC006077, Z93020, AC004212, AL008734, AL031655, AC007993, AC005695, AP000555, AC004913, AC007308, AF109907, Z97056, AC005277, AL020995, AC003041, Y18000, AL117329, AC007263, AL034421, AP000503, AP000008, AC004967, AP000514, AC004834, AC002558, AL034420, U52112, AC005632, AL022333, AC005755, AI049780, AL031123, AC007055, AL133246, AC005911, AC005049, AC003109, AD000092, AC004897, AC007226, AC005183, AC005829, AL023807, AL122020, AL109952, AD000864, and AC005993.
HBJMT52	208	726480	1 - 240	15 - 254	

HBJMV72	209	952862	1 - 469	15 - 483	
HBJMW20	210	669030	1 - 643	15 - 657	
HBJMX04	211	614930	1 - 338	15 - 352	AI810024, AW023610, and AA609969.
HBJMX21	212	933143	1 - 353	15 - 367	
HBJMX29	213	690404	1 - 347	15 - 361	AW166629, AA601349, AA052895, N66744, AI732437, AI114704, T86740, AA491447, T98482, AA918759, AA663115, AA663086, AA291630, H72049, AW084938, R11040, AI926873, AW440498, T87973, AA846969, H93001, N63743, AA603883, AW028174, AA838162, AA507035, AA706845, AA837385, AA291700, AA297496, H73336, AA352365, AC004961, AL133382, AL034411, Z73420, AC002352, AC004887, AC003108, AC004645, U91326, AC006111, AC005509, AC004081, AL008712, AC016831, AL031276, AL033392, AC005531, AC007298, AL080286, AC004950, AL031985, AC004987, AC004448, AP000365, AL021939, AP000514, AF015262, AJ229043, AC005037, AL020093, AF196969, AP000547, U08998, AP000295, AP000044, AP000112, AP000152, AC005516, AC004466, AC002312, AC002390, Z92547, AC005746, Z68756, Z70289, AC007774, AC002544, AJ010770, AL031584, AL121595, AB014080, AF017104, AB026898, AC003071, AC002400, AC006441, AL050312, AL034408, AF020662, AC000078, AL109798, Z95331, AC002400, AC004876, AC004106, AL022578, AL049430, AC006059, AF147316, AC005081, AC004638, AC004876, AC004106, AL022578, AC002365, Z85987, AF196779, AC007364, AC004167, AL034582, AC016027, M98447, U82671, AL009179, and AP000553.
HBJMX34	214	703843	1 - 382	15 - 396	
HBJNC11	215	966608	1 - 516	15 - 530	
HBJNC89	216	786707	1 - 341	15 - 355	
HBJND59	217	576434	1 - 767	15 - 781	AA985391, AI053911, AA548890, AW403888, AL037632, AA081462, AI470646, AA834809, AA588001, AA833896, AA833875, AI580250, AA912287, AA483771, AA380354, H59372, AW274349, AW303196, AA580808, AW196064, H61630, AW301350, AL138096, AA515457, AI791913, AI792133, N54894, AI821714, AA679154, AI282511, AA483218, F25733, AI270096, AL119713, AL120687, AI283312, AA683258, AA507822, AA457642, AA491862, AA838190, AA491650, AW270270, H70994, AI821785, AW440545, H69109, AC007226, AF003528, AL031905, AC005815, AL008715, AC005036, AC008055, Z98941, AL096772, AC023172, AC005144, AC006013, AC007435, AP000228, AF165147, AP000140, AC007488, AP000088, AC005722, AC002480, AL049712, AC002523, AP000201, AP000093, AC005881, AC007447, Z82198, AP000097, AP000237, AF107258, AC007437, Z74739, Z86064, AJ229042, AC005261, AF001552, AF146191, Z83846, AC007842, AL009050, AC007671, AC005249, Y12853, AC007298, AL023807, AC004216, AC008372, AL024495, AC005011, AL078459, AL031664, AC007066, AP000961, AL035089, AL079342, AL024495, AC005284, AC004741, AL121595, AC002499, AL021978, AC005874, AF134471, AC004948, AL080239, AC002091, AC007681, AL049744, AC010200, AC007262, AL033379, AC004948,

HBMBC18	218	578887	1 - 298	15 - 312	AC006965, AL033527, AI008629, AC007363, Z98742, AC006450, AC007182, AL020995, AC003009, AC006210, AF045450, Z84483, AC008122, AC006080, AC004638, AC002492, AL080285, AL022336, AL049779, AF165175, AC007395, AL020989, AC002543, AC004805, AL021939, AC006322, AC005682, AC008072, AC005006, AC009721, AC003086, AC006379, AC005243, AL021391, AC004061, Z97205, AC008124, AC005035, AF064860, AL031666, AP000108, AC007270, AL022144, AP000086, AL031681, AC005082, AC002429, AC009069, AL033525, AB020869, AC004905, AP000958, AP000161, AL031735, AC002449, AL133241, AP000150, AF053356, AL049540, AL049875, AC010169, AC004108, AF015262, U82696, AL031012, AL035416, AL117329, AL096792, AL022323, AP000009, AC005871, AI229043, AC002463, AL121877, AC005482, and AC006390.
HBMBC25	219	573103	1 - 414	15 - 428	AB014526.
HBMBC35	220	921417	1 - 348	15 - 362	AC004702.
HBMBC91	221	506594	1 - 560	15 - 574	H69543, H80124, W88965, W88544, R02124, and AP000497.
HBMBE72	222	760737	1 - 632	15 - 646	AW205507, and AI300640.
HBMBE84	223	578869	1 - 325	15 - 339	AC005905.
HBMBH36	224	971172	1 - 341	15 - 355	
HBMBH55	225	732250	1 - 289	15 - 303	
HBMBH91	226	753141	1 - 199	15 - 213	
HBMBI06	227	935819	1 - 407	15 - 421	
HBMBN32	228	775670	1 - 362	15 - 376	AA127005, H06566, AA125853, R56714, and AF191018.
HBMBO20	229	496513	1 - 453	15 - 467	
HBMBQ33	230	702457	1 - 461	15 - 475	R11468, AL009031, and AC002326.
HBMBQ83	231	689705	1 - 533	15 - 547	AA604872, AA026240, AA704592, AA258677, AC004087, and AC002385.
HBMBS11	232	967111	1 - 355	15 - 369	
HBMBT85	233	863938	1 - 349	15 - 363	AC018633, and AC005271.
HBMBU24	234	677240	1 - 179	15 - 193	AA747565, AW207289, AI249497, AW366372, AI336633, AI434255, AI432653, AW149876, AI336634, AI524654, AI472536, AI049713, T99953, R28164, AI538938, AI289542, AI344935, AI267185, F28295, AI114703, AI811603, AA749184, AL048323, AW059828, F35428, AL048340, AI473208, AI479292, AI360195, AW022102, AI890507, AI285514, AA493923, AI383804, AI801325, AW020419, AI690813, AI687568, AA595932, H89138, AW188698, AI699020, AI687587, AI289791, AI521005, AI784233, AI918554, AI345005, AW020095, AW169643, AI345745, AI225000, AI440263, AI698427, AA939199, AI468959, AI310575, AI161279, AI799351, AI872423, AI334893, AA481494, AI340533, AA761917, AI669640, AL120831, AI284509, AL047398, AI689404, AW169628, AL040207, AI345736, AI273919, AA587590, AA502794, AI345415, AI246070, AI436429, AI345396, AI366959, AI828574, AI499104,

AI345397, AI627714, AA207067, AI955945, R65859, AI560227, AI335235, AW021373, AI699056, AI285419, AI273856, N99092, AL047422, AI434731, AA127565, AI336631, AW072719, AA642348, AW190242, AI539690, AW079768, AW268302, AW235501, AA768478, AI583982, AI337186, AW302954, AW104141, AI348854, AI002285, AI050666, AI307494, AW274355, AI250646, AW088899, AA176980, AI336582, AW167229, AI251221, AI349957, AW131952, AA653459, AI285439, AW161579, AI885949, AI582871, AI581033, AI224463, AL048644, AW274192, AI500706, N27632, AI254727, AI500662, AI471429, AW301505, W48671, AI340511, AI624304, AA857847, AI679959, AI633061, AW022494, AI348870, AI571699, AI699154, AW020288, AI702527, AA420722, AI349814, AI349186, AI336575, AW020710, AW023859, AI609375, AI349772, AL038463, AW020397, AI334895, N63128, AA579232, AA635382, AW082835, AI815232, AI335476, AI343030, N33175, AI471909, AI491904, AI284517, AW268964, AI379711, AI218156, AW243232, AI804505, AI866581, AW075382, AI859644, AA629977, R32821, AW020826, AA062896, AI927233, AI348895, AI656270, AW068845, AI698391, AI336495, AI349276, AI538564, AI784214, AI612885, AI345639, AI553645, AW191003, AW089122, AI915291, AI371251, AW152182, AI538850, AI859991, AI537273, AW148303, AI582932, AA514684, AW020373, AI590043, W38903, AI586931, AI524179, W46378, AI446775, AI690946, AW088560, AW301344, AI521560, AI889189, AW264727, AL036146, AW161202, AW172723, AI309306, AI473536, AI866461, AL045626, AW151979, AI866469, AI865116, AI553669, AI252077, AI348897, AI250627, AW274318, AI500714, C16221, AI950892, AI633125, AL048499, N22276, AL047344, AL137562, AL137712, AR068466, E12579, AL117440, S77771, AR038854, AL133093, AF043642, A08913, L04504, U89295, A08912, X06146, E12580, AL133606, A08910, E01573, E02319, A18777, A08909, AL049324, X99257, X57084, U80742, S76508, AL137276, A08908, S36676, AL122123, AL080074, A08907, L40363, AF090886, S69407, AL049452, AL110196, U90884, AL133081, AL137273, X93495, AL117432, AL110280, AC006197, AR050959, I89931, I33391, AL110197, AL049460, AB030279, I89934, X00861, I49625, AF026124, AF058921, AF150103, AR064250, AB019565, AJ131955, AL133955, AL133636, AL050280, AB025103, AF079763, E00984, I04527, X62773, AF008439, I89947, A65965, L13297, Y11587, A65943, AL050155, E03671, AF200416, AF017790, I30339, I30334, I48978, AL096720, AF090896, AL133565, AF114168, AL008706, E08516, E02152, X63410, S75997, AL137429, AF100781, A90848, X62580, U67328, AR029490, I46765, AC006313, AB007812, U96683, X86693, AL080147, AF016271, E01614, E13364, U91329, AL137292, AJ012755, U72620, I89944, AF026816, AF169154, X82434, X79812, A65341, I42402, AF031147, M86826, AF106697, AL080158, E01314, AL122100, I66342, S83440, U62966, AL133113, AL133010, AF137367, AL137555, U75370, AF047443, AF032666, X72889, AL137550, AF001552, L24896, AF115410, U75932, AF091084, AL133104, AF175903, AL117644, AR054987, Y11254, AF141289, AL137538, AL133557, AL133016, AF036268, U57352, AL080132, AL080137, Y10080, AL137548,

					AF079765, X53587, AC002471, AC005374, X57961, I41145, AL136884, AF207750, AF100931, AF118094, AL049283, A65336, AF132676, AF061836, AR012379, AL117460, AL117585, U68233, I92592, X92070, M96857, U42031, E08631, I09499, AF125948, AL137256, AL133077, E02221, AF182215, AL137479, I68732, U88966, E15582, AF161699, AR034830, I96214, I18355, AF200464, A94751, AL137574, AF090903, I34392, I26207, AF085809, Z48796, AB029066, AF124435, X83508, D83032, X59414, AC006039, AL137537, AL137539, AF111112, A08916, AL133054, AF022813, AF118064, AL137478, AL137530, AF111851, AL122111, X63162, X89102, X52128, E15324, AF090900, AF061795, AF151685, AF158248, S68736, AL137658, AL133568, AF185576, AL122093, AF061573, AR068753, A90832, AF201468, AF113013, A57389, AF017437, L19437, A86558, and AL137286.
HBMBU38	235	531494	1 - 311	15 - 325	AL031259.
HBMBX69	236	698362	1 - 319	15 - 333	AC004883.
HBMBY27	237	574803	1 - 407	15 - 421	
HBMBZ71	238	880580	1 - 1275.	15 - 1289	AI075978, AW298093, AI201251, AW293546, AI917770, AA906330, W63599, AW086186, AA890701, and AA551674.
HBMCA44	239	716647	1 - 504	15 - 518	AA693506, AA411644, W31362, AA422026, W24882, AA016012, H16662, and AW351706.
HBMCA58	240	736084	1 - 287	15 - 301	AI380599.
HBMCA94	241	793174	1 - 444	15 - 458	AL078644.
HBMCD26	242	847826	1 - 275	15 - 289	
HBMCD49	243	723005	1 - 344	15 - 358	Z83853, AC006318, AC004137, and AC006262.
HBMCE22	244	674659	1 - 439	15 - 453	W31342, and AI699098.
HBMCH75	245	932037	1 - 562	15 - 576	
HBMCH88	246	711318	1 - 387	15 - 401	
HBMCK57	247	495736	1 - 493	15 - 507	AI859108, AI565562, AI366188, AA703350, AA983821, H59553, T98748, W26825, and AA630729.
HBMCQ14	248	658484	1 - 253	15 - 267	AF083106.
HBMCS34	249	703438	1 - 675	15 - 689	R25159, AW294139, and AI474654.
HBMCS77	250	465070	1 - 486	15 - 500	R00604.
HBMCT67	251	751643	1 - 312	15 - 326	AL031123.
HBMCU92	252	529580	1 - 514	15 - 528	
HBMCZ11	253	967099	1 - 303	15 - 317	
HBMCZ27	254	683436	1 - 331	15 - 345	U73636.
HBMCZ32	255	855694	1 - 369	15 - 383	AA610530, AL120543, AW192373, AA564682, AA470958, AC007204, AC005899, AL031291, AC002040, AL049830, AC005971, AC004783, AC006213, Z97832, AL049776, AF047825, AC002492, AF196971, AL035588, AC002470, AC007401, and AL078634.
HBMDA51	256	691116	1 - 434	15 - 448	

HBMDC03	257	924183	1 - 405	15 - 419	
HBMDC16	258	888206	1 - 398	15 - 412	
HBMDC88	259	750274	1 - 135	15 - 149	
HBMDD36	260	861576	1 - 279	15 - 293	
HBMDD59	261	739316	1 - 333	15 - 347	AA027081, AI525653, AI525669, AI557238, AI557808, AI557602, AI547225, AI557426, AI541321, AW020592, AW022727, AW021178, AI541056, AW022874, AI541048, AW020406, AW019988, AW021777, AW022826, AW022299, AI557222, AI525802, AW020425, AW022308, AW020328, AI886206, AW020634, AW023351, AW021693, AI557258, AW020931, AW022981, AW021182, AW020480, AW021466, AW022593, AW020629, AW023884, AI525857, AW021561, AW021059, AI525656, AW025656, AW020295, and AC007655.
HBMDE19	262	657382	1 - 339	15 - 353	AA677098, and AC004814.
HBMDF55	263	952830	1 - 393	15 - 407	
HBMDH79	264	805554	1 - 788	15 - 802	F34605, AL046519, AI340151, N69399, AI246061, AA229159, F00350, AI302350, H64549, F24745, R68706, H16875, AW071109, AI204309, AA523719, AA778580, AA456149, M85827, AI280566, M78026, Z30049, W45215, AA648957, H68343, AC012384, AC002480, AC005531, AL008710, AL035079, AL031729, AL022320, U80017, AC007488, AC004477, AL121769, AL022397, AP000300, AC002994, AL049832, AC002350, AC007172, AC007066, AC006449, AP000045, AC007014, AC004466, AC003681, AC006557, AC004791, AL031054, AC007880, AF109907, Z98884, AC005529, AC004797, AC002310, Z99943, AE000658, AC006101, AP000346, AL049712, AC003046, U15177, AC004874, AC005516, AL022316, AC002990, Z83822, AP000354, AC007040, AC005527, U91323, AC005191, Z82194, AL135745, AF001550, AC004656, AL031668, AC005829, Z95114, AL021707, AL121653, AC004448, AL121852, AL021578, AC004890, AC005184, AC005486, AC006141, AL008718, AC007228, AC004584, AC000003, AC003108, AC007919, AF196971, AP000501, AL096711, AC004816, U96629, AC006120, AF207550, AL031655, AC004263, AC005846, AC002367, AC006576, AL034429, AJ003147, AC007955, AC002369, AL049709, Z86090, AL034420, AC018633, AL121748, AC000159, AL035420, AC006509, AC004953, AC002528, AC004878, AC005015, AC005280, U89337, AC005049, AC002303, AC006137, AC005099, AL008635, AC007546, AC005696, AC004858, U89335, AL035681, AC003029, AF024533, AL031255, AC007182, AC005753, AC000097, AL008725, AL031848, AC006547, AC002470, U91325, AC000379, AB015355, AC005164, U91318, AL035355, AC005332, AC002091, AL049869, AC006468, AC005007, U95742, AC002565, AC006538, AC007707, AC005158, AC005800, AL031733, AC003075, Z85986, AC005859, AC007216, AL031643, AC004223, Z84487, AB003151, AP000688, AL034423, AL022722, AC005736, AL031591, AC003982, AF069291, AL034553, AC002312, Z82190, Y10196, AC004098, AC004967, AP000313, AC003950, AL035249, Z95704, AC005197, AC009542, AC005484, and AR036572.

HBMDJ11	265	967046	1 - 325	15 - 339	
HBMDJ36	266	721673	1 - 188	15 - 202	AC005971.
HBMDK12	267	970684	1 - 348	15 - 362	AW303196, AW274349, AW301350, AI754955, AA649722, AA634145, AA768097, AA937687, AA810370, AA719080, AA573020, AA644207, AA709005, AA504638, AA558060, AA487858, AA568778, AA649705, AA579736, AA554319, AA858197, AA461233, AA513972, AA501578, AA814522, N29933, AA132914, AA483731, AA480790, AA824655, AA824654, AA582911, AA077817, AA437161, AI830390, AA523815, AA350859, T15897, AA650450, AA602528, AA670468, AA861959, R97934, AA845813, AI434706, AI962050, AI284640, R38154, AA610493, AW440976, H50727, AI251002, AW236342, T07451, AA167659, AA525824, AA577906, T71030, AA229785, AA522942, AA603156, R97326, T06828, AA678499, AA743978, AA504871, AA578481, AA492140, AA623002, AA970213, AI625244, M77899, T05101, R89294, AA199616, AA490183, AW193265, AI282832, F18974, AA259245, AW276435, AI270117, AA826303, AI688846, AA605032, AA649642, AI824562, AA745104, T41124, AA113861, AA720548, AA729721, AA634146, AA525876, AA326589, AA569167, AI205126, AI278997, AA552885, H64778, AA346575, AA610611, T08438, AA325817, AI339850, AA075995, AW029038, AA558015, AA947360, AA804379, AI929531, AA664015, AA837677, AA632837, AA515435, AA550758, AA973803, AA483068, H63607, AA774184, F32800, AA703887, AA719805, AI434695, T06556, AW088058, AI537955, AA177061, AA020850, N66428, AA594145, AI469172, F19012, F36273, AA401022, AI216799, AA886584, AW438643, AA578391, AI281697, N33611, AA252263, AA837084, AA446657, AA947811, AA233519, AA780797, AA847128, AA771811, AA491762, AI291124, AA378580, AA586562, AI471481, AW166815, AA890235, AA713815, AA745410, AW162049, AA515051, AA665021, AW419118, AA323749, AI291268, AW276827, AI014358, AA503473, AA610783, AW021747, AA449088, AI537030, AA599920, AA605274, H10994, AL046409, AW440836, AA743960, AA368936, AI341548, AI679782, AA813902, W16581, AI904894, AA678443, H64563, AI564185, AA601499, AA485291, AA598586, AW193432, AA779040, AA346454, AA775940, AL044940, AI917271, AA557879, AI281881, AI469003, AI287651, AA385100, AA557686, AI801591, AI446464, AI286264, AW302450, AF150152, AA325699, AA441788, T40077, AI918421, T41155, AA225155, T67750, AA678772, AA827295, N63352, AI431303, AI049722, AI133636, AI567674, N25296, AA501722, AI002834, AA558697, AA747480, AI053672, AI674873, AA644551, AA551503, W47183, F03097, AI350211, AI890923, AA468131, AA352803, R97969, AA552945, AA569387, AW338500, AL046457, AA513293, AI375710, AA458736, AI287528, AA587604, AP000130, AP000208, AP000247, AP001046, AL096701, AP000302, AP000114, AP000046, U13056, U07000, Z83822, U14694, Y12508, U14719, AC004606, AF060568, M27161, AC005994, Z82208, AF003528, U89335, AL049869, AC006210, U14718, AL031447, AL035420, AP000307, M87916, L43392, AC006241, AC002984, U14687, Z82975, AL049843, AC004024, AC005971, AC007043, AL049776, AC007656, U47924, AP000047, U67274, AC005251,

HBMDK13	268	657221	1 - 610	15 - 624	AC004955, AP000431, AC002542, AC007671, AP000354, AC004916, AC004856, AP000115, AC000353, AL049745, D83989, AC020663, U20770, I51997, AL022328, AL078476, X75335, M89651, S75337, U14695, U14705, Z93241, U14717, AF147277, S70694, S70692, AC012599, U14685, U14686, U14689, U14691, U14699, U14702, U14707, U14710, AC009509, AC006111, AP001051, AP031051, AC006128, AJ006996, X58156, AC005200, AC000041, AC003962, AC002432, AL035407, AL096712, AL035425, AC005488, AC004953, AC004019, AL034429, AC008545, AL020996, AC006305, Z82211, AL049569, AC010205, AC007695, AL022238, AL096710, AC004768, AC004921, AL031597, AC005164, U73633, AP000555, AC007225, AC005778, AC004859, AC006315, AC005548, AL021453, AC004206, AP000297, AL049830, AL109967, AC006466, AL035695, AC008101, AC008125, AC006441, AL033379, AC004542, Z84814, AC007387, U57009, U18399, U14714, X54180, U18391, U18392, U57006, U18394, X55925, U18393, U57005, AC004385, X54179, X55928, AL035417, AL117354, D42052, U89336, AC005915, AL008629, AP000311, U91319, U18390, X55932, AF126403, U14703, AL034423, S70697, AC004671, AC002059, AL023494, S70689, AC002077, U14688, U14692, AC005252, AP000548, AC006013, AC005043, AL023882, AL022318, U02048, U02054, U02063, AC002072, AC007666, AC006511, AC006265, AF067844, AC004990, AC005242, AC004998, AL022721, U32576, AC004553, AC006126, AP000306, AF094481, AC005331, AC005175, AF129077, U67829, AC013248, AL008709, AC004227, AL031391, Z98046, AF130247, AF121781, Z98743, AC002564, AL031286, AC005102, AC004987, AC006476, Z86061, AC002379, AC004222, AL109622, AJ006998, AL034402, AF165138, AC004675, AC004806, U80017, Z95115, AC004931, AF165147, AC005154, AC010722, AL031584, AC006031, AC006064, AC009069, AC007538, AF088219, AC005815, AL022726, AC006057, AC006043, AC007207, AC007073, AF001549, AF027390, U66059, AC004526, Y10196, AP000961, AL031054, AC004458, AF077058, AL035450, AC002310, AF029061, AJ246003, AC006251, AC002996, AL050305, AL022157, and AL023804.
HBMDS17	269	796050	1 - 521	15 - 535	T85668.
HBMDS64	270	746572	1 - 392	15 - 406	AI142427, AF073792, U51134, and I81226. AI205126, T55510, AI003172, T53606, F19258, AW104748, AI474713, U51696, W60516, F29989, AA557325, AI608626, H71429, AW080134, AI365988, AA340960, AI962050, AA814017, AI251002, AW339687, AA515051, AI929531, AW166815, AI635272, AA169801, AA229785, AW162049, AW440836, AI339850, AI890923, AI567674, AI625244, AI049722, AW029038, AI904894, AI917271, AI133636, AL119391, AA713815, AI469003, AA826303, AA904218, AL120674, AW338500, AA115968, AA584751, AW131034, T29180, AL038785, AA079706, T12272, AI922840, AL040913, AI368745, AA340003, AA551509, AA228329, AL041368, AL138265, AA653057, AA148489, AW023672, AA886584, T90706, R55847, AA644207, C06458, AA482711, AA483068, AA669251, R95171, AI679782, AI003743, AA501344, AA327782, AI433187, AA099892, AI802526, AA113186, AA365587, AC004491,

Clone	No.	ID	Range 1	Range 2	Accession Numbers
HBMSB19	271	847800	1 - 252	15 - 266	AC004149, AC007684, AC004540, Z86061, AF015171, S75337, AC004770, AF015160, AL031584, AC005778, AL009181, AC006312, AC006502, AL132712, A39972, U14718, AC005940, AC004885, U14717, AC004167, U14699, U14685, U14686, U14688, U14691, U14710, U14687, U14692, U12580, AL049777, AC004019, AC005291, AC003663, AL109733, AC007055, AC006211, AP000459, AP000311, AC004052, AL031588, AC005815, AC004832, AC003048, AF064866, AC007917, AF015167, AC004808, AC005399, AC007320, AL031904, AF015169, AC005772, U12583, AC006285, AL049557, AC005971, Z74696, U14707, AC006441, AC005385, Z84480, AL035089, AC004814, AC004831, AL132716, AC018725, AP000696, AC005280, AL031120, AC002331, AC005375, AL033525, AC005046, AL096701, Z98743, AC003003, U14695, U14705, U14701, U14702, AC004812, AC004884, AL031905, AC006001, AC003950, U47924, AC005751, AC005212, AC004596, AC005412, AC005585, AL137614, AC010197, AL049869, AF067016, AC006384, AL021391, AC004159, AF015166, AC007387, AC006071, AC006480, AF015170, AC006456, AC004989, AC000052, Z84479, AC004228, AC006011, Z69921, AC006984, AC004408, AC007377, AL078644, AL136504, AC004859, L35531, AC006019, AF015162, S75201, AC006057, AF015158, AC005999, AC006030, AP000497, AC005701, AL078621, AC000080, AL109758, AC006972, AC010722, AC009731, AL110502, AL021155, AF031078, AF140763, AC002349, AC005520, AL078580, AC007077, AC005041, AL050305, AF147277, AF055066, AL135746, AL133245, and AL031287.
HBMSK92	272	531156	1 - 114	15 - 128	
HBMSO15	273	847795	1 - 425	15 - 439	H53903, and AP000692.
HBMSO39	274	531158	1 - 206	15 - 220	AC006504.
HBMTF79	275	544889	1 - 119	15 - 133	
HBMTG05	276	932497	1 - 245	15 - 259	
HBMTM75	277	574515	1 - 317	15 - 331	AB017919.
HBMTP84	278	703844	1 - 253	15 - 267	AI510796, AA351893, AI982994, AA847341, AA778580, AA455202, AI734193, AI791227, AI732911, AI884404, AI734158, AA581317, AA636077, AA843542, AI815425, AI002863, W45215, M77964, AI890283, AI207534, AI867012, AA729628, W02419, R79396, AI816073, AC006084, AC004820, AC002369, AC002558, AC005383, AC007014, AL009181, AL050308, AC003071, AC004659, Z98950, AL132987, AC002350, AC002492, AC005200, AL049699, AB023049, Z95116, AL021918, AL020997, AL109613, AC002492, AC004816, AL096701, Z85987, AL035089, Z82190, AC007501, AL049828, AC005775, AL031368, AJ246003, AL021394, AC005553, AC005535, AL022322, AL121658, AL049838, AC006211, AC005102, AL031587, AL049830, AC005574, AC002115, AF124730, AL079342, AF111168, Z83843, AC007686, AC000025, AL008582, AC005527, AL022578, AC005630, AC001644, AC004386, Z97876, AL117344, AC005089, AC002316, AL133275, U51561, AP000275, AP000037, AP000105, AL020996, AC004987, U91327, AL049643, AL049709, AC005099,

| HBMTU03 | 279 | 924979 | 1 - 292 | 15 - 306 | AL021937, U73643, AC004073, AC006509, Z93023, AC000111, AF111169, AC007283, AC011311, AC004812, AF001552, AC005372, AP000501, AC002553, AF006501, AJ243213, AL122023, AC004686, Z73417, AL035086, AC005224, AC008014, AC007066, and AF011889. T41134, H61871, AI962094, H65010, AI915081, T83057, AI445774, N54397, H62550, AI370470, AA135761, H68343, AA385775, AA847064, D51809, AA161305, AII87148, AA371410, R70883, R70884, AA747757, F33037, AA722146, D51877, AA133332, AI571161, F17529, AI559304, AA584594, AA633039, AA298365, AA584493, R92563, AA297006, AW276683, AA664126, R19199, T48723, AA838091, AA602971, AA584183, AA935409, W39287, AI619994, AA714011, AW245860, AA719523, AI800426, AA445951, AI697242, AA653291, AW237905, AA236867, AA487209, N27874, H63660, AA583386, AI049955, F35684, AA587215, AC002091, AI024498, AC006512, AL031597, AC003982, AC006487, AL022165, AC004000, AL049856, AL135744, AC007565, AC003042, AC006023, AF217403, AC004752, AC002492, AC007193, Z98200, AC005003, AF196970, AL121603, AC006211, AL109798, AC005324, AC004821, AL022315, AL020997, AC005089, AC005914, AC006432, AL022302, Z93023, AC004854, AL133245, AL050332, AC008072, AC002470, AL034421, U29953, AC005736, AL096701, AL031681, U66536, AC007792, AC005670, AC004098, AF111168, AC005837, AC007774, AC002073, AF196779, U89337, AC005682, AL109952, AC005921, U91326, AC005225, AC005081, AC004383, AC005940, AC005531, AP000503, AL022336, AF053356, AC005391, AL031053, AC005844, AL009179, AC006241, Z98304, AL049776, AC005330, AC004967, S42653, AL034429, AF045555, Z85987, AC000120, AC005911, AC004531, AC003029, AC005015, AC005562, AF001549, AL009181, AL034420, AC005519, AC005318, AP000030, AP000212, AP000134, AC005800, AC004491, AL031311, AL035400, AL031447, AC004552, AC006071, AC005899, AF196972, AF207550, AC005696, AL049757, AP000704, AC004034, AC016027, AC006001, AF134726, AL022149, AL031432, AC004955, AC006057, AC005231, AC005747, AC016830, AC005484, AC002477, S79836, U73647, U11297, AC005520, AC004686, AL022311, U80017, AL078581, AC006480, L48038, AL031295, AC002544, M63544, AF181896, AF130249, AF190465, AC004477, AL049761, AC004152, AL035671, AL136295, AC000062, AC005726, AC005786, AC003051, AC007308, AC005808, AC003041, AC006101, AC002116, AC006387, AC005829, AC005277, AC005091, AC005924, AP000116, AP000510, AC006285, AL139054, AC002312, Z97353, AC007327, AP000251, AC004812, AL133243, AL031670, Z97183, AP000512, AL049557, AC004583, AL078639, Z97832, AC003013, AC006441, AC004895, AL023575, AC004655, Z99128, AC004858, AC005568, AC006035, AL009183, AC004598, U47924, AL033392, AP000350, AC005332, Z82201, AC007685, AC005261, AL031737, AC006236, AL035422, AL031255, AC004217, AC000353, AC009308, U62317, AC004796, AL021366, AP001053, Z69837, AL109827, Z85986, Z81364, AL031595, AL034417, AC002378, Z69666, AL031985, AC005527, X55448, AC005598, AC004534, AC007993, AL031848, AC005632, AL034549, AL031005, U95739, AL022326, AL121852, AC006115, AC004797, |

HBMTW58	280	806670	1 - 651	15 - 665	Z98885, AC004843, AL021155, AC009516, Z69705, AL031291, AC002310, AC008372, AF001548, AC004979, AC005331, AC004999, AC005768, Z83846, AC000026, AC004883, AC005193, AL035423, AL022721, AC006273, AC007878, AC002404, Z83822, AC001227, AJ003147, and AL035071.
HBMTX29	281	689834	1 - 139	15 - 153	
HBMTX84	282	537385	1 - 338	15 - 352	Z93017, and AL009181.
HBMTY82	283	523728	1 - 316	15 - 330	
HBMUA62	284	557828	1 - 330	15 - 344	AI064768, Z98753, AL031681, Z95703, AC000354, AC007036, AL135746, AL109653, AP000516, U82672, AL133512, AL049648, AL033530, AC004986, AC002357, AL049554, Z83850, AC006152, AL022164, Z75895, AC010349, AL022310, AC004191, AB014088, AL096803, AL021812, AC002069, AC011604, AF121898, AC005323, AC006354, and AC004930.
HBMUD12	285	574796	1 - 306	15 - 320	AL122020.
HBMUF60	286	740606	1 - 311	15 - 325	AC007536.
HBMUG57	287	735024	1 - 303	15 - 317	AL096791.
HBMUH62	288	752244	1 - 329	15 - 343	AI312718, AC005023, Z95118, AC005041, and AL034548.
HBMUJ84	289	531159	1 - 243	15 - 257	
HBMUK59	290	712591	1 - 462	15 - 476	
HBMUN30	291	693337	1 - 559	15 - 573	AF015720, AJ229041, AC005829, AL031283, AC000134, and AL031255.
HBMUO10	292	953933	1 - 316	15 - 330	
HBMUO12	293	417210	1 - 178	15 - 192	AL022313.
HBMUO90	294	928078	1 - 311	15 - 325	
HBMUP35	295	531101	1 - 236	15 - 250	
HBMUT83	296	793052	1 - 462	15 - 476	AW080842, AII26237, AA033525, AI288602, AA070152, AI200312, AW293916, AI738708, AA033526, AW182578, AA961647, AA808104, AA884100, AA410505, AI635980, AA580797, AA748547, T71568, AI004853, AA975024, AI674097, AA988905, T82022, AL133609, AL137420, and Z94722.
HBMUV03	297	924916	1 - 394	15 - 408	
HBMUY32	298	959968	1 - 234	15 - 248	
HBMUZ96	299	574522	1 - 208	15 - 222	AL020995.
HBMVA83	300	529815	1 - 275	15 - 289	AL043165.
HBMVE14	301	545170	1 - 685	15 - 699	AA160290, AA357550, AW377670, AA046565, AA447158, W42824, and N21687.
HBMVI79	302	781686	1 - 227	15 - 241	AC020663.
HBMVI94	303	574511	1 - 191	15 - 205	
HBMVO02	304	920759	1 - 598	15 - 612	AL109839.

HBMWA31	305	529678	1 - 406	15 - 420	AW291592, AA135499, AI949732, AI367157, AI040759, AA682731, and AA764743.
HBMWA57	306	526863	1 - 202	15 - 216	AC002470.
HBMWI35	307	706033	1 - 367	15 - 381	
HBMWJ01	308	959223	1 - 635	15 - 649	AI621074, AA648509, AW103842, AI133256, AF118079, and AL133216.
HBMWL30	309	936058	1 - 309	15 - 323	
HBMWL91	310	529837	1 - 202	15 - 216	
HBMWQ85	311	765109	1 - 397	15 - 411	AW377503, AA007382, W23548, AA001311, H53191, and N78201.
HBMWV93	312	574801	1 - 439	15 - 453	
HBMWX74	313	573336	1 - 310	15 - 324	AC004223.
HBMWZ14	314	573335	1 - 311	15 - 325	
HBMWZ16	315	712832	1 - 482	15 - 496	AI436109, H27387, AI889289, AI027575, N79584, AA828426, AW014938, N79587, AI174444, AI143425, AW247147, AA826017, T59414, AW087276, AI434510, AI913074, AI351503, AI200849, AI921728, AI222784, H11717, AI246366, AI936789, AA281074, AI093047, AW004642, AI826923, AA857401, AI313190, AI589862, AI581002, T66176, H14297, AI313169, and AI658705.
HBMWZ94	316	573348	1 - 334	15 - 348	
HBMXE31	317	573323	1 - 298	15 - 312	
HBMXF47	318	573324	1 - 66	15 - 80	
HBMXG08	319	959766	1 - 405	15 - 419	
HBMXH68	320	571361	1 - 584	15 - 598	
HBMXL10	321	968054	1 - 385	15 - 399	
HBMXM65	322	925570	1 - 467	15 - 481	Z55829.
HBMXN39	323	705578	1 - 348	15 - 362	AI054090, AI246061, AI284543, AA297207, AI249853, AI251241, F33126, AI254770, AI133514, AI251944, AI251034, AI251203, AI251284, AI250552, T93105, AI690497, AA502098, AI300054, R51582, AI160786, AI223626, AA779667, AI421723, AL119156, AL119182, AW019964, W63553, AA378207, W81372, AA714011, AI866970, T08386, AW303098, AI570019, AI749306, AA558366, AW069227, AA492114, AA664126, AI368873, AA805989, H86579, AI889579, AI634187, AI457313, AA772704, AA745628, AA582746, AA491767, AA938727, F35684, AA657910, AA837771, AA831408, AI619994, AA584493, AA769141, AA302934, H95822, AA587215, AI858272, AW161016, H78984, W95552, AA078128, T64444, AA890060, T39230, AA568747, T51556, AA973913, AA244406, AW236277, N25079, AW392414, AL134940, AI110760, T61928, AW169390, U46402, AI650702, AA122310, AC007406, AL022726, AF196972, AC005881, AL022320, AC006270, AF178030, AC006576, AP000501, AC004813, AC009248, Z99128, AC005899, AC012627, U82828, AC006084, AC008123, AL049694, AL109963, AC002425, AC005157, AP000011, AL031432, AF196779, Z98304, AC005291, AL135744, AF165926, AC005516, AC005529, AL133246, AC004812, AC005519, AC005082,

					AL031311, AC003982, AC002310, AC006344, AC003080, AC007447, AP000310, AP000309, AP000048, AP000116, AL078581, AL109758, AF042090, AP000086, AL031003, AL096701, AL024508, AR036572, U91328, AL117337, AF205588, AC007014, Z84487, AC006538, AC002045, AC004526, AC002059, AL023807, AC006079, AC000025, AC005736, AL121655, AC005527, AC005411, AC005189, AC005754, AC007055, AF165176, AC006450, AC005527, AC005411, AC005189, AC005754, AC007676, AC003109, AC003684, AF117829, AP000557, AL031230, AF049895, AC002470, AC005919, AC005914, AP000014, AL031584, AC007312, AL110122, AC004682, AL024474, AC002470, AC005919, AC005914, AL024507, AC002302, AL022318, AC004876, AC007066, AC003093, AL078477, AC005325, AC007637, AC004674, AC005925, AP000282, AL021394, AL109628, AC007685, AP000692, AC009509, AL049760, Z97180, AP000040, AP000108, AF184110, AC002544, AF196970, AC005562, AC005180, AC003967, AL049834, AP000213, AC004849, AP000135, AC007993, AC004025, AJ010770, AL022238, AP000031, Z95152, AP000313, Z97053, AC006059, AC004651, AD000813, AC005846, AC002039, AC006509, AC004000, AC007387, AB001523, AP000555, Z97635, AL031668, U70984, AF196969, AL021920, Z94056, AC009247, AP000050, AC007279, AC005913, U91318, AC006285, AL021978, AL008719, AL109756, AC005920, AC007023, AC003041, AB020874, AC005755, AC006480, AC005871, U91321, AL049553, AF019406, AC007129, AC004598, AC005800, AC004859, AI251973, AF053356, AP000355, AP000117, AC005274, AP000503, AC007227, AC002492, AC005737, AF064864, AL035455, AC004765, AL035443, AC004560, AL133485, AC003665, AL035405, AC005049, U91326, AC000379, AL121852, AF091512, Z85987, AC004491, AJ003147, AF134726, AC004893, AP000552, AF180748, AP000321, AC000118, AD001502, AC002554, AP000260, AP000193, AP000099, AP000121, AL049643, AP000036, AL008707, and AC010170.
HBMXN69	324	731274	1 - 356	15 - 370	AI934342, AI652289, AI749542, AI708414, AI659752, AA521117, AI685658, AI469153, AA810054, and AA749006.
HBMXO08	325	959768	1 - 336	15 - 350	
HBMXP90	326	574802	1 - 576	15 - 590	AI206408, AI765081, AW117539, W76554, W47134, AI282130, R00077, AW139096, AI970492, F10866, AW003300, AI492386, AI473105, AI699748, R38163, AF007132, and AC006055.
HBMXR44	327	693123	1 - 400	15 - 414	AA094354, AL120141, U49973, Z99128, D83253, AP000150, AP000009, AC007869, AC007297, AL031781, AL022333, AC018633, and AC004382.
HBMXS38	328	706039	1 - 654	15 - 668	AA806368, and AI811425.
HBMXU37	329	787155	1 - 512	15 -526	AA354804, H95288, and AC004472.
HBMXW13	330	657241	1 - 408	15 - 422	AL035461.
HBMXW73	331	764440	1 - 338	15 - 352	AA634933, and T63384.
HBTAE07	332	953607	1 - 543	15 - 557	AA618452, AA478355, AI284640, AA493695, AL046409, AA453558, AI133297, AL045808, AL046156, AI270117, AI345157, AA490183, AI583283, AW275510, T06754, AW438555, AI499588, AW149313, AA584167, AA775143, AA836811, AA483929, AL042753, AA938105,

AW023990, AI963720, AI471887, AA954924, AL119691, AL046266, AA912099, AW163293,
AA309257, AA224525, AA533333, AA493136, AW161966, AA019312, AI247199, AA661921,
AI687343, T74382, AI445674, AI828710, AI873852, AA508359, AI313166, AL138455,
AW264934, AW302903, AA679936, AI633025, AW021207, AA487888, T41247, AL121235,
AI370074, AI431303, AW438643, AA812281, F00107, AW084466, AI311927, AL037683,
AW270343, AI305766, AA838190, AW168618, AW193265, AI559705, AI567076, AW069769,
AA551552, AA774222, AI754253, AA610491, AI350211, AI744826, AA834792, AA101689,
AI732120, AA013124, AA747070, AA580808, AA372481, AA623002, AW408047, AA523833,
AI370094, AI860013, AA680243, AI751216, AA658362, AI584186, AI933534, AI754658,
AW050498, AA502104, AA765736, AI798489, AW085855, AI246119, AA630672, AW407578,
AL046205, AI633390, T51911, AA984166, AI708009, AW149339, AI240168, AI093030,
AL119724, AA493894, AW265194, AA526787, AA834707, AI613280, AI027459, AI754336,
AI953275, AW104030, AA603185, AA826671, AA724333, AI307608, R07710, AI084294,
AL038705, AI039584, AA320966, AI110688, AW302013, AA225072, AL138096, AA483223,
AA478297, AA493975, AA577959, AW193760, AW023149, AI634384, AA484679, AI580250,
AA854993, AA613397, AI791913, AI792133, AW002350, AI821714, AL009051, AC005620,
AC004940, AC006205, AF002994, AC002430, AC007384, AC005754, AC004152, AC004686,
AC005406, AC010072, AC005527, AL121603, Z98051, AC002310, AC004603, AC000029,
AC002289, AC006251, AL132992, AL050308, AP000161, AL096776, U66059, AC004855,
AL031785, AL078477, AL035423, AC004690, AC000025, AC004638, AC009044, AL009029,
AL031587, AC008014, AC007681, AC007298, AF001549, AL022322, AC003098, AC004519,
AL032822, AC006285, AL035587, AC005089, D83989, AC008372, AC000353, AC002565,
AC009330, AF200465, AL049749, AL023494, AC007243, AL121694, Z69666, AC007686,
AP000553, AC005209, AC004808, AC002115, AC000052, AC003977, AC007214, AC004010,
AL008725, AC009247, AL034374, AC004987, AC005291, AL031904, AL023882, AP000328,
AL049780, AC005018, AF195658, AC008080, AC004854, AC005411, U07000, AL109657,
AC004802, AC007666, AL031577, AC005234, AP001051, AL022722, AC002540, AC002377,
AL078463, AC006501, AC004057, AL022166, AC005529, AC004087, AC006213, AL136297,
AC007677, AC004972, AC004890, AC007406, AL008716, AF123462, AC005412, AL139054,
AL034549, AC005324, AL021395, AL023879, AP000158, AP000158, U91328, D84394,
AL031054, AC002429, AC004954, AC004019, AF227510, Z93023, AC007055, U91319,
AL022163, AC004070, AL023280, AC002549, AC000066, AC004130, AC002509, AC007193, AL133396,
AC007919, AL022163, AC016025, AP000049, AC004814, AC005829, AL031286, AF015148, AC005998,
AC004006, AC016025, AP000049, AC004814, AC005632, AC003108, AC003108, AF015148, AC008064,
AL080243, AF088219, AC008249, AC005859, AJ010770, AL031281, AC005740, AL049556, AL096861,
AC005488, AL049776, AC005859, AJ010770, AL031281, AC005193, AL035252, AL096770, AC004901,
AC005484, AC005253, AC002300, AL080278, AC005193, AL035252, AC006292, AC007245,

HBUAG42	333	676856	1 - 349	15 - 363	AC005231, AP000311, AC005065, AP000014, AC005261, AC004691, AL078604, AL033392, AC004970, AC005066, AL031311, AL049709, AC006344, AC006384, Z98941, AL023284, AC007043, AC009516, AL031983, AL035697, Z94277, AC005387, AF068862, AC005599, AC007877, AC005968, AC006160, AC006058, AC000111, AF042090, AP000065, U18394, AC006479, AC007051, AC006972, AI008720, AP000088, AP000044, AC004612, AL109865, AC006989, AL121934, AL035659, AP000345, AC002385, AL133445, AC002553, AC002402, AC005701, Z98884, AC005228, AC004986, AC004672, AC007151, AC004626, AC006312, AC004210, AC007656, AL031848, AC002077, AC005102, AC004388, AL117329, X55926, AL021393, AC005839, AP000123, AP000055, AP000170, AP000114, AP000046, AC003085, AL031681, AC006539, AC007314, U95742, and AC002470.
HBYAA17	334	924209	1 - 213	15 - 227	AF108138.
HBYAB40	335	463488	1 - 307	15 - 321	AI310343, AA559205, and J03059.
HCFAA38	336	576731	1 - 408	15 - 422	AA713872.
HCFAC84	337	869259	1 - 626	15 - 640	AL031733.
HCFAF63	338	689719	1 - 404	15 - 418	
HCFAT85	339	728254	1 - 333	15 - 347	AA527109, AA533660, AF205588, Z83820, and Z82200.
HCFAU41	340	576064	1 - 452	15 - 466	
HCFAU74	341	576069	1 - 201	15 - 215	
HCFAV46	342	924086	1 - 515	15 - 529	AL110393, H58351, AA564859, H58740, AW074398, AW023672, AA714595, F37169, AI561335, AW086257, AA626678, F37223, AA878495, AA558697, AA515435, AI205126, AA366035, AA654627, AA626747, W60516, AW302322, H64777, AA077817, AA748121, AW268338, AI648558, AA355281, AI867044, AI198376, AI284640, AW088058, F36273, AI053907, AA652057, AA649642, AI865364, AA308806, AL036523, AA317170, AI016000, F19258, AA434484, AA095511, AA605274, T40617, F32705, AA663922, F36373, M78150, AI252884, AI110770, AI446638, F29989, AI888926, AA342901, AA318652, AW406447, F25135, AW301937, AI281881, AI281903, T40338, AW265654, AI567577, AI358343, AI026770, AW419262, AI200051, AI053672, AI435544, F18974, AA059154, AW166815, AA127354, AW151884, AA377730, AI471543, AI358229, AI471481, AI924251, AI061334, AW406755, AA321311, AA125788, AI824562, AW080134, AI688846, AA515224, AA127353, AA831388, AI365988, AA745410, AA908687, F36404, N71724, AI334443, AI963720, AL120483, AI298710, AI654588, AA569187, AA913549, AI630203, AA663306, AA177061, AA704643, AA338431, AL120295, AA557879, AA565666, F28576, AA446955, AA715270, AW339687, AW276827, AA661948, AI446464, AA904218, AI654529, AA483034, AI569086, AI350211, AW193265, AI286356, AI144330, AL042753, AA173238, F35113, AI635272, AW264973, AA650244, AI343173, AI375710, AA559290, AA327323, Z98473, AI623898, AW193432, AI176924, AI341664, H56013, AA610491, AI160582, AA578141, W95976, AI890918, AL046409, AI709365,

AI344844, R72458, AA252763, AI287651, W95841, AA350859, AA737154, AI431303, AI286264, AA226715, AI744739, AW167267, AI049634, AA659083, AL041733, AW236342, AI499094, AL119691, AI281465, AI287528, AA913114, AI335378, AA626404, AI962050, AW069807, AI079910, AL037291, F34498, AII51261, AI474085, AW265393, AA299115, AL039958, AI084303, F28776, H64560, AII46484, R98967, AI613280, AI904894, AW029038, AI251002, AI439360, AI761471, AA482711, AW264969, AI610159, AW265294, AI929531, AW338086, AI499503, AA743956, AI281697, AA362700, AW129001, AL138265, AW238016, AA665330, AI160117, AW270270, AA515751, AI674873, AA640272, AA584581, AC007277, AC005562, AC006270, M87919, AC006277, Z98751, M87918, AC004062, D83253, Z93783, AP000009, AL109772, AC005201, AC007298, AC005191, AP000552, AL049539, AC007325, AC006312, AL109654, Z98048, U14715, AC006596, U02058, Z97634, AC004449, AC004132, AP001054, AC004876, AB001523, AL031293, AC005577, AF109907, Z83841, AB020869, AL023755, U14719, AC007537, AL079340, Z68332, AC005553, AL031683, S70697, AC004675, AC007038, Z83844, Z99716, AC007546, AC005274, AL022165, U14717, AL023807, AF088219, U14714, AC004485, AC007899, AL049611, U14718, AC006213, U14716, U02048, AC007021, AC006132, AC004139, AL031224, AF181896, AP000151, AL031123, AC005923, U02063, AL133485, AP000455, U14713, AC005730, AL008583, L81726, AC004262, AC007370, AC004234, AC000003, AL031655, AC006948, AF147277, AC007058, AL049814, AC005595, Z84480, AL031588, AL034344, AC005288, AL078581, AC007058, AL034554, AC005072, AP000345, AP000346, U14711, U14712, AC005071, AC008033, U14702, U14689, AC004841, AC005740, AC000070, AC000070, AC006241, AC006207, AP000356, AC004963, U14706, AP000076, AC004695, AC004019, U02054, AC006552, AL031282, AC005622, X75335, AC004787, AF002991, AL031679, U11309, X54181, AL023875, AL049780, AC012380, AC004460, AC006019, AL031447, AC004768, AC005632, AP000141, AC000095, AL133289, AL021920, AP000143, AP000010, AC004452, AC004979, AC003007, AC000046, U18390, AC005776, AP000228, AL049569, AF006752, AP000090, AL049775, AC005808, AL109733, AC016025, Z98046, AP000140, AC003950, U14691, U14685, U14686, U14687, U14688, U14699, U14710, X54178, AC007542, AC003029, AC016027, AC006064, AP000503, AC006353, AC016830, AC005318, Z86090, AF134726, AC004726, AC006064, AP000064, AL096734, AC012599, AC005521, AC005884, AP000211, AP000133, X55925, Z98950, AC004989, AC008101, AC007664, AC005620, AC004967, M37551, S70694, AL133445, AC006484, AC005486, Z82198, AL078614, AL132992, AC004797, AC005177, AF015148, U18391, AC004592, AP000697, AF015152, AC005081, AC003992, AL121823, AL117329, AC007631, AC004223, Z83745, AC006035, AL132985, AC005619, AL031848, S70707, AL096765, M87916, AC005571, AL078596, AC005539, AC004152, Z69890, AC006458, M87917, X54175, AP000433, AC004955, S41998, AL035681, AL049709, AC004030, AF104455, AC002522, AC000118, Z94721, AF077058, Z83836, AC005779, AP000089, U18392, AC005037, U80017, AL080243, AL049759,

HCFAW03	343	924532	1 - 330	15 - 344	and AF217403.
HCFAY27	344	784950	1 - 254	15 - 268	AI952593, AA402934, and T24885.
HCFAY33	345	576058	1 - 166	15 - 180	AA680371, and T85563.
HCFBA96	346	853961	1 - 176	15 - 190	AC005969. AI613235, AA903469, AA813305, F25776, AW071554, AW150820, AW194200, AI983597, AI246999, AW004802, AI364662, AI282522, AA628330, AA229754, AA526614, AI365012, AI299507, AI918967, AI553849, AI560300, AI950742, AW075387, AA868647, AA447147, AI690364, AA411518, AA713800, AA953331, AI094450, AA682774, R96820, AA302484, AA872093, AI300639, AI015741, AA130713, AW262508, AI051521, AA496620, AA978132, Z38471, AA736839, F31462, F18178, AI350873, AA805472, AA988865, AA496495, T24559, AI081865, AI144428, H61569, AA37381l, AA229480, AA132945, AA703237, AA229962, AI690503, AA745775, AI720505, AI452250, AW009901, AW015954, AW118526, AI249388, AI282565, R56834, AI219656, AI285115, AI369774, AA461097, AW130721, AW339140, AW273429, AW148657, AI538694, AA065282, AI866733, AI874208, AI199700, AI805844, AW008035, AI829142, AW337251, AI983830, H46569, AI814591, AI818220, AW269978, AW168266, AI186921, AA229233, AI610303, N34882, AA832328, AA923506, AI078009, AI301063, AA670351, AI203695, AI339100, AA987523, AI803837, AI751711, AI445423, W94943, AA449775, AA280728, AI017038, AW276596, AI423558, AI828679, AA677814, AI954092, W68425, AI754933, AI799656, AI092937, AI277972, AW274402, AI310725, R59097, AI279557, AI310726, AW410249, AA526185, AA573897, AI078388, AI741564, AI147456, H98073, AW410004, AI300518, AA526998, AI721118, AA522451, AA508660, AA004278, AW182880, AW411240, AI953077, AA533655, AI283484, AI970703, W90665, H56058, AL120205, R10734, T73441, AI591031, AI741030, AW270071, AI827198, AA628743, H25535, AI972733, AI927014, T51235, N91829, AA853526, AI860745, AI887607, AA580297, AI348361, R56835, AA229196, AA858412, AA102712, AA228723, AI535963, H26397, AA526103, AW189969, AA229458, AA644220, D25820, AW410257, AA557419, AF151822, AF176006, AF189289, and AF192559.
HCFBB14	347	658542	1 - 233	15 - 247	AA223831.
HCFBD91	348	850449	1 - 141	15 - 155	AF172244, and Z74023.
HCFBF07	349	953506	1 - 286	15 - 300	.
HCFBG82	350	870890	1 - 551	15 - 565	AI127475, AI871007, AA142876, AI523587, AI830621, AW134689, AI825831, AA773904, AI862655, AA143146, AI768600, AA576383, AI307774, AW274750, AI916645, AA633463, AI334590, AI867665, AI867677, and AW152392.
HCFBI39	351	576018	1 - 330	15 - 344	
HCFBI80	352	576669	1 - 466	15 - 480	
HCFBL08	353	959617	1 - 289	15 - 303	
HCFBN62	354	576126	1 - 628	15 - 642	AA553332, AA343810, AI354333, AA496309, AA745302, F01222, N70957, AA757869,

	355	835926	1 - 423	15 - 437	AA584597, AW277135, AA297698, AA532875, AI146266, AW249720, T30864, AA484256, AW084161, AA295874, AA295865, AA225358, T63747, AA167549, AA229842, AI866971, AL096766, AC006285, AC005225, AL133163, AC003663, AP000501, AC004927, D87675, AC005237, AC006285, AC005089, AL031587, AC005215, AF111168, AL031176, AL034429, AL109801, AL121655, AC004821, U07561, AP000359, L78833, AP000555, AL133241, AL022323, AC016025, Z95114, AL117258, AP000343, AC002432, AC004216, Z93017, AL031276, AL035071, AL050302, AL049569, AP000263, AC002395, AC005483, AP000036, AL049692, AC005387, AL096791, AP000088, AL133448, AC000397, AC005808, AC006315, AL022163, AC002106, AR004690, AC006430, X87373, AC005358, AC004983, AC005621, AC009069, AL096703, AC008150, AC005755, AC005102, Z98884, AC006211, U82757, AC005740, AC006128, AC005527, AB016897, and AC004476.
HCFBO76	356	577218	1 - 301	15 - 315	AF031077, AF031076, AF031078, and AF030876.
HCFBR92	357	576864	1 - 463	15 - 477	
HCFBS25	358	828076	1 - 326	15 - 340	AI028522, AI040333, and AI055988.
HCFBS73	359	506244	1 - 484	15 - 498	F19258, AI820743, AI003172, W60516, AI003743, AA551509, AL038785, AW104748, AI365988, AA635417, AI205126, AI762575, AA229785, AI914706, AI350211, AA584749, AA557325, AA483204, AI962050, AA340003, AI917271, AW265294, F29989, AW166815, AA077935, AI358229, AI904894, AI567674, AW339687, AA856981, AI635272, AI815000, F28576, AI474713, AA973575, AI569086, AW080134, AI038279, AW337985, AA515051, AI079910, AI133636, AW130799, AI445436, AI890052, AI963786, AI929531, AL079645, AA482711, AI469003, AI433187, AI890923, AW162049, AL042856, AI679782, AA713815, AA077817, F31619, AA344959, AL119391, AA579184, AA077952, AL041368, AW440836, AA558269, AW029038, AW118011, AW105538, AI625244; N99715, AL040913, AW088202, AA228329, AI421213, AI471729, AI358343, AW003434, AI866807, AW264969, F36273, AL048144, AI499094, AI051551, AW069807, AI049722, AI339850, AW193432, AI284640, AW074398, AI149915, AA904218, AW406755, AL041412, AW088616, AI244254, AL120674, AA340960, C06327, AA365587, AI064952, AW265197, AI608626, AL046746, AI547286, AA743956, AI653515, AA228420, AI282907, AA837755, AA339076, H88666, AI251002, AW275664, AI305766, AA639025, AA601270, AI053535, AA745410, AW338500, AI963720, AI761471, AW327360, AI565873, AI468134, AA366035, AI922840, AI886060, AA078483, F31204, AI341664, AA826032, AI590038, T12272, AA501344, T29180, W49488, AI610159, AA533138, AI934307, AA516326, T55510, AW407220, AI720141, AA601218, AA381665, AA515128, AA365144, AI286264, C05755, AI688846, AA658235, AA826303, R89296, W38648, AA580662, AW131034, AI291047, AI935827, AI918421, N58729, AI886365, AI827234, AW151016, AW023672, AI821776, AW157005, AW193265, AI028510, AI611280, AW103239, AW419118, AA987962, AA669961, AA843450, AI637587, AI082510, AA133986, AI951889, AI951928,

AA732212, AA659774, AA528441, AI061334, AI291823, AA492244, AI807372, AI124660, W26042, AI312790, AI431303, AI039809, H13868, AI054246, AI336054, AI564589, AI802526, AI110688, AI368745, AA457639, AI355587, AI471481, AI890928, AI053476, AI053774, AI890570, AI806850, AW276827, AI038990, AW327961, C06458, AL046409, AI557323, AI590591, AA489775, AA443065, AI588856, AW327960, AI879000, AA115968, AI926846, AF177861, AL138265, AI863283, AI886176, AA364488, AW264973, AW192199, F13749, AA225195, AW238016, AL135643, AA535661, AA601492, AI537955, AI446601, AW102955, AA148489, AA715606, F35659, AA747889, AA364567, AI349874, AI284467, AI719014, AC005694, AC005527, AC005529, AC007687, AC004814, AC005040, AL023574, AL049589, AC004617, AR060472, U29953, AC005924, AL109733, AC005954, AC004651, AC004029, AL133246, Z97630, AC005225, AL133297, AC006441, AC007436, AF045448, AC002295, AC007845, AC005177, AC006285, AC005772, AC016025, AC008372, AC004592, AP000358, AP000954, AP000561, AC002430, AF165926, AC007384, AC007320, S48196, X53795, Z77894, AL132992, AC005222, AL021977, AC004506, AC006011, AF015162, AC004189, AP000563, AP000133, AP000211, AC000062, AL035695, AL034400, AC006518, AL121694, AC005696, AL049836, AF029308, AC003104, AL031286, Z93023, AP000855, AL023803, AL022323, AC005229, AF002991, AC006537, AC003048, AC005164, Z82203, AC005999, AL022576, AL033381, AC008126, AP000359, AC004186, AC003959, AL021878, Z98950, AC003003, AC007051, A39972, AC004806, U12580, AC002462, Z98744, AC004866, AC005399, AC007671, AF196779, AC004019, AC005341, AL031709, AC006132, AC005156, AC005207, AC005754, AL121578, L13713, L13714, S75337, AP000305, Z73496, AP000047, AP000115, AF064863, Z98754, AC005922, AL034549, AC006511, AC002041, AL035402, AF120990, AC006512, AB002329, AL033544, AC005387, AL035450, AC006312, AC006221, AC003088, AC005661, AF164343, AP000049, AP000193, AF043945, AC005064, AF064866, AP000311, Z73986, AC005099, AP000117, AP000352, AL021808, AC007319, AC006249, AC007543, AC006374, AC007461, AC006241, AC005832, AC007319, AC006249, AC007543, AC004382, AC004789, AF140763, Z47046, AC005574, AC008165, AF031078, AC003001, AF030876, AC007558, AL078644, U47924, S75201, AL022393, AC006373, Z81369, AC004741, AC004808, AL009177, AL021939, AL079295, AC022517, AC002487, AF015160, AC005610, AF015171, AF015167, AF015170, AF015169, AC001528, AF015168, L81648, AC006048, AC005262, AC003030, AL049859, AP000509, AC006262, AL096771, AC004167, AC008134, AF064857, U12583, M96868, X13921, AB014460, AF015725, AC002323, AC005525, AC002105, AC005786, AC006456, AF190465, AP000495, AL109618, Z82900, AC006150, AC005048, AL031012, AC005589, AC004861, AC002347, AL050343, AC004103, AC005913, AC000111, U07000, AC004832, AC018767, AP001037, AC004816, AC004945, AC007065, AC005822, AC005084, AC004168, AC004831, AL031121, AC000052, AC007055, AL109865, AC000134, AC005406, AC006449, U18392, AC006352, AL034424, Z69921, AF060568, X04981, X71874, AC003966,

HCFBU01	360	916703	1 - 543	15 - 557	AP000292, AC004391, AF039905, AC006277, Z68328, AP000958, AC006561, AP000566, AL031662, AC005144, AC004636, AL022157, and Z84485.
HCFBU38	361	707620	1 - 273	15 - 287	AC011422.
HCFBU84	362	573546	1 - 447	15 - 461	AA654338, R11792, R18553, AA488229, and R33569.
HCFBU85	363	576010	1 - 255	15 - 269	AI817736, AI084181, and AI918987.
HCFBW13	364	828042	1 - 458	15 - 472	AP000315, AP000118, and AP000165. Z42409, R59109, W78198, AW276841, R14684, AC004013, AJ010770, AB018346, AF091711, AF083037, AB019691, and AJ131693.
HCFBY02	365	920340	1 - 409	15 - 423	AI859280, AW392291, AI342622, AI598003, and AW17154.
HCFCA31	366	725700	1 - 421	15 - 435	R09578, AA676513, H10338, AA313594, AA336022, N25123, T32628, AL135366, N56063, Z42875, R47343, AA411514, T55290, H40743, H40750, AA402101, AA496316, AA320228, AA040891, AB027196, and D87451.
HCFCB67	367	751764	1 - 445	15 - 459	AA862312, AI564185, AA702605, AA469451, AI368862, AI628288, AI904586, AI904594, AI742168, AA847499, AL042667, AL042670, AI679294, AW169038, AA481887, AI679871, AA827771, AI143840, R93642, AI623364, AF003626, AC006277, AC005534, AC002542, AL049759, AL021940, AL031848, AC005512, Z93930, AL021877, AC005488, AC005666, AL096712, AC004019, AP000133, AP000211, AL050332, AF134726, AC004913, AC007676, AP000503, AL034420, Z99716, Z97632, AC005280, AC007536, AC004596, AC002316, AC007731, AC005500, U47924, AC006441, AL033527, AC004526, AC000025, AL096701, AL022336, AC005971, L47234, AC008124, AL035420, Z95114, AF064861, AP000140, AC005529, AC004033, AC008372, Z98742, AC000120, AL008718, AL022320, AC005899, AF190465, AC005696, AL049776, AL109827, AC006207, AC005015, AC003977, AF048729, AF109907, AP000501, AC005932, AL135744, AL133371, AC009247, AL034429, Z82190, AF031078, AC004150, AF030876, AC002115, AL132987, AP000088, AC006121, AC005300, AL133245, AC007541, AC003950, AC004825, AL035703, AC009044, AL133233, Z84496, AC002470, AL022313, AC022322, AC007308, AC006487, AC002558, AL022163, AC004821, AC006455, AL022322, AC006273, AP000432, AL050318, AF111169, AC007878, AP000513, AL049869, AL096699, AC007066, AC005821, Z98044, AL031680, Z83819, AC005520, AP001052, AL031780, AC005625, AC007664, AC005871, AC006312, AF002223, AL031597, AC002477, AL031005, AL031846, AC005255, AL021546, AC005060, AP000030, AC006538, AC005067, AC005839, AC006023, AC005232, AC008249, Z93020, AC002543, AL035683, AC007546, AL020997, AC005527, AC005484, AC005881, AL021391, AC005841, AC006111, Z84480, AB017602, AC005399, Z82198, AC005940, AC004228, AL035079, AC004796, AC005326, AL008635, AF001549, AL139054, AC005304, AL034417, AL121653, AC005237, AL079342, AC004750, Z82097, Z99128, AC005924, AF108083, AC00118, AL133163, AC005412, AC005920, AC005568, AL109980, AC004841, AC005546, AC004662, AP000049, AP000116, AC002472, AC008122, AC004832, AC003684, Z85987, AC004686, AF053356,

HCFCC57	368	577375	1 - 390	15 - 404	Z93023, Z93096, AC012384, AC006241, AC005231, AC004024, AC002310, and AC006042.
HCFCC68	369	753089	1 - 276	15 - 290	AW341274, AI458691, AI802196, and AA937243.
HCFCC94	370	670538	1 - 431	15 - 445	AC005776.
HCFCD44	371	883973	1 - 396	15 - 410	AC009731.
HCFCF47	372	894415	1 - 382	15 - 396	AI086865.
HCFCH47	373	720400	1 - 267	15 - 281	AC003072.
HCFCJ21	374	671028	1 - 179	15 - 193	AI472536, AL119457, AL042382, AW117919, AI625464, AI400725, AL041150, AI824576, AA911767, AI927755, AW265004, AI932915, AI554343, AI345416, AI345612, AW084425, AI345415, AI611348, AL042544, AA833760, AW161156, F27788, AI073952, AI280670, AL079794, AA603709, AI174394, AW022682, AL079960, AI874151, AI924686, H42825, AW163823, AI886022, AI932638, AI568114, AL038445, AI433206, AI866770, AI969655, AW080402, AW022699, AI954504, AI627880, AI523827, AI284484, AW268243, AI382201, AL120921, AI251221, AI345608, F35882, AI868204, AW148356, AI470651, AI269862, AI699011, AW167918, AW078800, AI345471, AI886753, AI866082, AI866741, AI784230, AI334450, AI916419, AI783861, AW193134, AW193203, AL119399, AL036638, AI494201, AW021588, AI800341, AI310332, AL037454, AL036403, AI249946, AW268220, AA814990, AL036215, AI648684, AI470293, AI521594, H89138, AI677824, AI582483, AW148716, AI866798, AI860897, AI382670, AI863321, AW089275, AI335426, AI348777, AI919500, AI352326, AI866127, AW168485, AI345148, AI627745, AI241923, AI624293, AI680498, AI280607, AW302988, AL120736, AI698391, AL121328, AA807088, AI623682, AI682652, AI613548, AI890907, AI284131, AI434453, AI628833, AW189415, AW168031, AW169653, AI344785, AL036214, AW167086, AI620284, AI582932, AL134999, AI469738, AI343059, AL040241, AW302854, AI280747, AA761557, AI799195, AI623622, AW152469, AI866469, AW149925, AL036396, AI358213, AI573026, AI349933, AI349004, AW162194, AI539028, AI348897, AI590423, AI310155, AA848053, AI345253, AI344935, AI934039, AI687065, AW090393, AI343091, AW150794, AI345677, AW058233, AI866820, AI358701, AW169604, AW149227, AI926878, AL110306, AI862144, AI583308, AI811684, AI889168, AI554821, AI568132, AI470648, AW196105, AW193872, AI473598, AL046926, AI041772, AI367210, AI783504, AI929108, AI335209, AW073697, AI567351, AI446092, AI678480, AA983883, AI921386, AI698401, AI266436, AI689420, AA830821, AI288285, AI890806, AW050578, AI589267, AI685211, AI306705, AI955906, AI950664, AI345746, AI612885, AW167448, W33163, AA494167, AW023859, AI590686, AI680389, AI471361, AW051088, AI696969, AW172723, AW162071, AW089572, AI954422, AI192052, AI561132, AI637748, AL036673, AW059713, AW271119, AL038605, AW162189, AW020693, AL038565, AI371228, AI580674, AI344928, AL042440, AL037030, AW088134, AI349798, AA910956, AI680377, AI633477, AI680457, AI249962, AI288050, AL036718, AI587606, AI431424, AI688631, AI468872,

					AL119863, AL047387, AW268261, AI889147, AW277066, AI889147, AW151714, AW189270, AL048644, AW129230, AF008439, I26207, I48978, Y11587, AL137292, AJ242859, AL137560, A12297, U35846, AL137429, Z72491, AF125949, A08916, AL137521, AL137476, A08910, I89947, A08909, A08913, I00734, AF113019, AF090934, E00617, E00717, E00778, AF079763, X65873, AL137556, AL049314, AF158248, AL137283, I48979, AL080158, AF111112, I89931, U49434, I33392, AL122008, I49625, AF100931, AL117585, X93495, AR038854, AL137273, AF028823, AF153205, AL117578, AF090903, A08912, AF177401, AL050138, X63574, AL137463, S61953, AB019565, AF113694, AF162270, A08908, U58996, AF017152, AL122049, AL049300, U96683, AL133568, AF146568, AF078844, Z37987, AF061795, AF151685, AL110225, AF104032, X81464, AL049466, AL133640, AL137271, I42402, U35146, AF183393, A93350, A03736, X83508, AF067790, L19437, Y16645, AL137557, AF118070, AL110196, A77033, A77035, AL049382, AF111851, AR059958, AL133075, AF090900, L31396, I66342, AL117440, S68736, AL117435, AF079765, L31397, AL050277, X72889, AF003737, AF113689, E05822, L30117, I09499, AF090896, AL080124, E02349, AL117583, AF176651, AF111849, Y14314, AL137533, AL080074, AF081197, AF081195, AR020905, AF026124, E15569, AL050108, AL137527, AL049464, AL117432, AL133565, AL133606, E02221, AF119337, AL133645, M30514, AL122111, AL110221, S78214, AF185576, S79832, AF139986, AL137480, AF022363, AF032666, AF000145, AL122123, D83032, AR011880, AF113690, AL133067, E03348, Y10080, AL117649, AF000301, A07647, AL133016, AL137488, U42766, X53587, AR000496, U39656, AF159615, X84990, AB007812, A45787, U68387, AF113677, I09360, AF113699, X70685, AL137550, AL133014, U80742, AF090901, AJ006417, AL122110, AR038969, AF118094, A65341, AL137478, AL049452, AL080159, AF132676, AL133081, AF061836, AL137538, AL050116, AF125948, AF113676, AL096744, AL122118, U78525, AL122093, AL050393, A18777, AL122121, AJ012755, AR013797, AF017437, AF067728, I03321, AL049283, E06743, U67958, AJ000937, AL133080, AL122050, AF087943, AL049430, AR029490, AF210052, AL133665, AL117457, AF106657, AL080148, AL137294, E12747, AF106862, AF057300, AF057299, AL133560, A93016, AL080086, S75997, X82434, AL050024, AF118090, Z82022, AL117416, E07108, Y09972, E08631, U00763, Y07905, AL050092, AL133072, AL110222, AF061943, AL133098, X92070, AF113013, AL117394, X96540, I41145, AL080060, AF100781, AL137526, AF118064, AL133093, E04233, and AJ238278.
					H05227, AL134081, AI908615, and T79353.
					H79453, AA053463, AA302978, AI310992, AI300818, AI619994, AI962030, AW083934, AW008074, AW270768, AI446205, AA480486, AA469230, AA486277, AW083678, AAI76604, AA862029, T93109, AA228778, AI267884, AA302661, AI653776, AL039309, AW082104, AI250552, AI251034, AI185394, AI254770, AI284543, AI054090, AA501655, AA515351, AI915081, T94072, AI309059, F17537, AI583291, AI078409, AA904211, AI291037, AI567676, F32248, AA683069, AI251284, AI251203, AI223626, AI249853, AI421755, AW242031,
			15 - 860		
			15 - 436		
		1 - 846			
		1 - 422			
	970835				
	850422				
	375				
	376				
HCFCM12					
HCFCN66					

AA487209, AI271762, AA354695, AI049504, F35684, AW195271, AA420703, AW105729,
AW192518, AA429481, AA541532, AW073934, AI310343, AW194046, AA135761, AI889579,
AA410788, AW277174, AI216151, AI366555, AA573000, AI050076, AA553594, AA728894,
T48723, AW341882, T47075, AI082510, AA669961, AA664126, AA568314, AA745628,
AA513884, AW419389, AA579184, AA525253, AI251241, T41134, AW302017, AW023111,
AA484892, AW089950, AW341955, AI278972, AA704393, AI356440, AI306717, AA768179,
AW327751, AI521019, AI984168, AA947370, AA349606, F23262, AI254779, AA365586,
AI929531, R67701, AI872229, AA599710, AI268818, AI471455, AI340832, AI031759,
AA738014, AA721645, T93105, AA278496, N71619, AA715351, AA728861, AI572680,
AA493840, AI300054, AW169038, AI049722, AF111168, AC005280, AL050321, AL049843,
AF003626, AL133246, AC004834, AP000030, AC007510, I34294, AP000556, AL022333,
AC005015, Z98051, AL031985, AL022326, AC004491, AC005696, AL031280, AC005327,
AC005005, AL035587, AC005841, AC006275, AL031121, AC004552, AC004623, AC005288,
AL008726, AC004990, Z69719, AC003098, AP000354, AP000298, AB001523, AC006241,
Z68276, AF039907, AL133245, AP000252, AC005031, AC005839, AC005559, AL133448,
AC000353, AP000212, AP000134, AC004999, U80017, Z85996, AC005914, AC004254,
AC003688, AC005037, AL139054, AL096701, AC006288, AC005632, AF001549, AP000044,
AP000112, AL096775, AC002381, AC002401, AC007731, AC005261, AC005500, AC005901,
AP000691, AC007688, AC007690, AC005902, AC008154, AC006597, AL035413, AC006487,
AC006539, AC006370, U81031, AC000028, AC002375, AP000692, X54156, U94788, AL021155,
AC007565, U73330, AL022398, AC007421, AL008730, AC005231, AC007766, AC006511,
AL034395, AC003962, Z97056, AC004973, AC002472, AC002477, AC002119, AC006450, ·
AC006042, AC006468, Z69917, AL049873, Z98885, AC005972, AL109613, AC005788,
AL031393, AC005913, AF045555, AI246003, AC004462, AC004796, AP000688, AL050318,
AL031588, AL035652, AC004878, AC004856, AC003007, AF064866, AC009247, AC007225,
AL031255, AC003690, AC005365, AL031229, AC006538, AL031685, AC006116, AP000512,
AC004150, AL008719, AC006544, AC004659, AC004771, AC004643, AC007686, AL121754,
AP000501, AC004752, AF047825, AF053356, AP000300, AL080317, AC004103, Z84469,
AP000116, AC005800, Z82208, Z93017, Z98047, AL133355, AP000151, AL049780, AL008720,
AP000511, AL049631, AC007243, AL034420, Z96074, Z82244, AC003071, AC005004,
AC007312, L77570, AC007546, AC006455, AL035089, AC002288, AC005207, AC005520,
AL121655, AL109799, AL021808, AC002312, AC007664, AC005828, AC004590, AC008989,
AC004033, AC005874, AF134471, AL035455, AC004983, Z97989, AC007226, AP000152,
AC007429, AC002527, AF064857, AC003043, AC008064, AF001550, AC004797, AL035695,
AC005736, AC003667, AC002492, AC011456, AC005220, AC005220, AC004966, AC005778,
AC004019, AC008045, AC004814, AC006084, AL121603, AL024498, AC005324, AP000113,
AP000045, AC005837, AC005777, AC002563, AC005239, AC008044, AL031667, Z93241,

HCFCN81	377	576871	1 - 581	15 - 595	AL078581, AC004851, AL031663, AL031282, AL009181, AC000025, AC005180, AC004859, AC006464, AP000115, AC002476, AC006101, AL117354, AL031284, AC005535, AL133312, AC002390, AL031848, AC006537, AC006271, AC005723, Z83840, AC004707, AL034402, and AC008372.
HCFCP14	378	577277	1 - 318	15 - 332	R13709, Z44811, and AA084016.
HCFCP31	379	764750	1 - 431	15 - 445	AL043121, H26563, AA774273, and AA480145.
HCFCR76	380	862682	1 - 552	15 - 566	AL033547.
HCFCX73	381	575988	1 - 349	15 - 363	H80303, AI809174, AC005091, AC004671, AL031283, AC020663, AL034417, and AC002527.
HCFDB13	382	576709	1 - 325	15 - 339	
HCFDD48	383	720938	1 - 363	15 - 377	
HCFDE10	384	961270	1 - 411	15 - 425	
HCFDE19	385	671507	1 - 550	15 - 564	AA126608, and AC003959.
HCFDE79	386	575996	1 - 350	15 - 364	
HCFLC28	387	968304	1 - 344	15 - 358	
HCFLD28	388	850564	1 - 517	15 - 531	AW294229.
HCFLD78	389	773685	1 - 659	15 - 673	AA284537, AI161251, AA703386, AII44156, AI080716, T95314, H44601, R54003, R53410, AA707567, T95396, AI863960, AA705879, AA444145, AA443965, AL045360, AI819631, AI862146, AL119399, AI336575, AI289542, AW020397, AL043168, AI253379, AI620056, AW162194, AI698391, AI633125, AA587590, AW051088, AL046466, AW151893, AI638644, AI345415, AI890907, AI345612, AI590043, AI589428, AL042382, F27788, AL037454, AI800341, AA806719, AI345416, AI565172, AL043152, AI679550, AI567582, AI802542, AI042544, AI500061, AW089844, AW274355, AI884318, AL079794, AL119457, AI929108, AI637584, AI889189, AI470293, AL041862, AW152182, AI345688, AI923989, AI567513, AW051059, AW007309, AI479292, AI538850, AI866469, AI890391, AI538764, AL036187, AI817523, AI702073, AI473536, AL119324, AI673363, AL040241, AA808175, AL110306, AI267162, AI432644, AI954183, AW129659, AI673363, AW301344, AL038505, AI254814, AW059766, AA580663, AI446775, AI870192, AI969655, AW301344, AI491710, AI270183, AI690813, AI433157, AI589134, AI567769, AI469425, H89138, AI491710, AI270183, AI538885, AW022300, AL046618, AI282679, AW104056, AW021717, AI539800, AL119511, AI538885, AW022300, AL046618, AI282679, AW104056, AW021178, AL037582, AI245008, AL037602, AI540674, AI685080, AA975952, AW079572, AC008151, AF146191, AC005968, AL050309, AC007458, AL050322, Z82206, AL050306, AL031732, AC005296, AC007392, AC007298, AC002464, AL035258, AL031904, U95739, AC018769, AC018767, AC002287, and AC009286.
HCFLE44	390	576679	1 - 339	15 - 353	
HCFLE95	391	945122	1 - 576	15 - 590	AI697165, AI434288, AA642239, AI818876, AA970105, AI271514, AI571352, AA411035,

HCFLF96	392	579039	1 - 330	15 - 344	AI371320, AA865735, AA134979, AII33257, AI536699, AW248707, AII98061, AW182002, AI261681, AI991804, AA344380, AI810573, AI685434, AA293139, AI699206, AA652700, AI688845, AI458014, R60967, AW007141, AA419241, AI089210, AI369965, AA489594, AW383812, AI739141, AC004707, and D13623.
HCFLG84	393	711243	1 - 425	15 - 439	AA978266, AL049780, and AC007055.
HCFLI49	394	722269	1 - 525	15 - 539	AA312278.
HCFLJ40	395	576068	1 - 324	15 - 338	
HCFLP31	396	698139	1 - 460	15 - 474	
HCFLR55	397	576043	1 - 243	15 - 257	Z84475, and AC006924.
HCFLR83	398	576054	1 - 576	15 - 590	AL043019, AL042433, AII42132, AW372827, AL134902, AII42137, AL134524, AL119401, AL119443, AL042450, AII42139, AL042896, AL079687, AL039912, AL134525, AL119522, AL119396, AL042978, AL042544, AL042614, U46351, AL134536, AL042965, AL042975, AL119418, AL037205, AL042984, AL042542, AII19464, AL043033, AL043029, AL042551, AL119511, AL043003, Z99496, AR069079, AR043113, AR066494, and AR060234.
HCFLT42	399	576040	1 - 396	15 - 410	AA281808.
HCFLU12	400	970849	1 - 506	15 - 520	AL096816.
HCFLW58	401	964870	1 - 513	15 - 527	AA082673, and Z36960.
HCFMC42	402	670519	1 - 437	15 - 451	AI040051, AW438542, AI824541, AW021917, AA130647, AI270476, AI061313, AA225044, AA878140, AW265090, AA582554, AW167154, AW103383, AI623563, AA862243, AA653139, T50676, AW105729, AA665181, AA610509, AI821044, AL039187, AI590458, AW302048, AA570740, AA483606, AI275183, AA955031, AW075132, AA568204, AI536625, AA658844, AA574442, AI745473, AA879053, AI598003, AA601278, AI559645, AA528480, AA664604, AI292236, AA528390, AA613627, AI590499, AI338426, R94354, AA121777, AI276298, AA191418, AA970967, AI017251, AI791659, AI753365, AI859280, AA598545, AA579566, AA224995, AA584482, AI654285, R94288, AA347114, AI244356, AA581460, AA572685, AW161636, AA618316, R96643, AC005822, U50871, M87914, AC006512, AL035588, S42653, AP000555, AJ131757, AC005399, AL049872, AF053356, AC005341, Z99716, AC005529, AC005057, AP000212, AF196779, AC005778, AL109623, AC005747, AC005899, Z69917, AC006965, AC002470, Z95114, AF134726, AL022069, AC005089, AC005907, AC004408, Z98884, AL022313, AF045555, AL009181, AC005971, AC005041, AC006480, AL049557, AL021978, AF187320, AC009498, AP000512, U85195, AL109952, AP000552, AC007685, AC007227, AC005391, AC007421, AC005288, U47924, AE000658, AL008726, AC006013, AC005588, AC005225, AL139054, AC006600, AC004975, AL034555, AC005746, AC005484, AL121694, AC003665, AL035072, Z82901, Z82214, AL050308, AC006953, AC005082, AB022537, AC004099, Z97056, AL034420, X84664, AC007052, AC007686, AL034548, AL033521, AC004386, AC005562, AL096776, AF196969,

HCFMD15	403	1 - 657	975075	15 - 671	AC002504, AB023051, AL049776, AP000502, AL009178, AP000496, AC002544, AC005049, AC007563, AB017602, I34294, D84394, AC002425, AC010582, AC004813, AC007201, AL031393, AC002477, AC002314, AP000501, AP000359, AL049694, AC002316, AC005520, Z95116, AC002418, AC005722, AL021154, AL032821, AC002040, AL035587, AC007731, AC004623, AC005086, AC003688, X85812, AC005914, AL049759, AL031668, AL033527, AL079340, AC012085, AC004655, AC002430, AC002398, AL031427, AL117339, AC006538, AC002485, AC005527, AC009516, AF001549, AF047825, U96629, AC007878, AC007387, AL021918, AC003037, AF196970, AC006476, AP000556, Z97352, AC004472, AC006449, AC007384, AC005070, AL022721, AL008718, AC008101, AC002457, AC003080, AC003663, AB003151, AC004799, AL050318, AL031228, AC005694, AL078593, Z83840, AC007250, AC002543, AC005318, AC006388, Z93023, AL008582, Z82203, AL049830, AP000134, AL034582, AF109907, AL022323, AL031311, D87675, AI246003, AC007690, U63721, AC002301, AC007386, Z93928, AJ011713, AC006160, AC009247, AP000704, U91326, AL049553, AC005578, Z93928, AJ011713, AC005261, AC004913, AL078621, AC004019, AD000833, Z97053, AC010197, AC008079, AL031295, AL022318, and AC005500.
HCFMD23	404	1 - 324	676003	15 - 338	
HCFME27	405	1 - 423	576815	15 - 437	AL031283.
HCFMF47	406	1 - 567	973243	15 - 581	
HCFMF64	407	1 - 812	773342	15 - 826	AA243815, AW173441, AW173520, AA354361, AW082254, AI628870, AI936417, AI640772, AW293620, Z32860, AL049667, and AL022398.
HCFMG14	408	1 - 354	576063	15 - 368	
HCFMH12	409	1 - 457	970843	15 - 471	AI446464, AI284640, AA649642, AA515435, AW440976, AW236342, AI264743, AW383634, AA350859, AI623696, F32894, AA483034, AI273185, AI688846, AI205126, AA318652, H64777, T63104, AA470985, AA365347, AA558697, AI053672, AA886584, AI064864, AA077817, AI471481, AI910609, AI251002, T07287, AA557879, AW193265, AW383542, AA605274, AA747472, AA513999, AW193432, AI334443, AW088058, AA593060, AW089810, AW272758, AW438643, AI350211, M62249, AI830390, AA177061, F36273, AI110770, AA601892, AI648558, R13151, AA229785, AI832782, AW276827, AI824562, AI590689, AI590958, AA714453, AW338086, AL046409, AI040313, AI608626, AF150152, AA331025, AI085719, AA368936, AI049722, AI281881, AW383608, AW383628, AA328591, T06556, AW383440, AA369477, AI431303, AW383586, AA720702, AI282336, F19012, AA364224, AW406447, AI986251, AW029038, AW383605, F24284, AA593247, AW383624, AI962050, AI341664, AW383606, AI281903, T40077, AI286356, AA653221, AL120674, AI537955, AW261871, AA252763, AI287528, AI653905, AI367401, AW272641, AI687962, AA366820, H15679, AI352078, T08638, F37169, AI291124, AI499938, AW272925, AW339568, AI929531, AI805380, AI418327, T40338, AI049940, AA300016,

AI702095, AW151896, AI041690, AII133164, AII186470, AI720431, AII148245, AI291268,
AI358571, AI684208, AI340453, AW249835, AW383455, AW383629, AA084070, F18974,
AI431232, F31204, AI287651, AI537030, AI753567, AA632407, AI677668, F33511, AW082063,
AA587604, AA704147, AA679672, AW276172, AA719805, AI282832, AW166815, AW168342,
AW025031, AA441788, AA626404, AA491762, AA745410, AI434695, AW162049, AA443695,
AI613280, AI754955, AI623898, AI339850, AI339440, AA338522, AI287451, AII133636,
AI567674, AW406162, AI367471, AI801591, AI270117, AA515051, AI364020, AW022379,
AA365302, AA079101, AA572975, W79504, AI341548, AI679782, T07451, AA100372,
AA526779, AI904894, AW338292, AI354587, AI917271, AI281465, AI252554, AI538928,
AA102047, AI613473, AI268812, AW383596, AA977743, AL079812, AW274349, W47444,
AA664535, AA321311, AW023672, AW270270, AI371070, Z93784, AL049869, AC003983,
AC004933, AC007056, AC005220, AL031846, AL035071, X87344, AC000067, AL035667,
I51997, M87916, AL022324, AC006062, AC006965, AC006055, AL096867, AC004947,
AC006212, X75335, Z84476, AB000882, U57005, U18393, AC004878, U18394, AL050308,
X55928, U18390, X55932, AC005013, S70697, AC005251, X54180, AC005909, U57009, U57006,
AC007126, AC005962, U91324, AL078463, U85195, S75337, M87919, S70694, AP000567,
Z98256, AL032821, U02054, U02063, AC005348, AB000658, AL096773, AC004638, X55925,
AC004963, AL133246, AC005015, AC005389, AF003627, AC004896, AC006925, AL034548,
AL035681, S70707, AF147277, U18392, U02058, U18391, AC006925, AL031680, AC006370,
AC004158, Z98946, AP000431, AB003151, AP000688, AC005502, AC005207, AC004537,
AF196779, U18395, U14719, AL109733, D83989, AL049636, AC005915, U14701,
U14695, U14705, X55924, AP000346, U14699, U14702, U14710, U14685, U14686, U14689,
U14691, U14692, U14707, L81648, AL021453, AC006057, AC005145, AC005297, AL049710,
U14718, AC005023, AP000302, Z68165, AC004815, AC007919, X55930, AC003029, AC002056,
AC006210, Z84474, AF090944, AF077058, AC006336, AC005019, AC002366, AL031311,
X55926, AL133238, AL049835, AC004381, U18398, AC004890, U14708, U02048, AP000114,
AP000046, AC005581, AC000124, U14703, U14688, U14687, AL035407, AC005544, AC005341,
AP000193, AC007100, Z30993, AL121603, AC006417, AC004220, AF038458, AL008728,
AP000050, AL031257, X55922, AF015156, AC007384, AF053356, AL049776, AP000311,
AC005696, AC004222, AC006996, Z94277, AC005082, Z49816, AL008718, AC003013,
AC007792, AF015147, AP000117, AC006241, AL008723, AC005971, AL078624, AP000017,
AP001053, X54175, AL031347, AF161343, AL008709, AC003007, AL080242, AC005284,
AC005763, AL008635, U63721, AC005552, AC004496, AL031589, AC008119, AC007421,
AC006596, AF029308, AL022476, AC006026, AC005873, AC006536, U14700, AC004668,
AC002086, AL080285, AL031770, AC004859, AC005332, U14684, U14693, AC006511, Z99754,
AF111169, AC005575, U18396, AL121653, AC005699, AF094481, AP000557, AC020663,
AB020859, AC005003, AL022394, D42052, AP001043, AC004895, AL035494, AC005412,

-1569

HCFMI70	410	576096	1 - 342	15 - 356	AC005385, U91327, U66059, AC004799, AL031258, AC006292, AC004996, U07000, AC004006, AC004841, AL022318, AC004987, AC003075, AP000460, and AC005822.
HCFMK25	411	576081	1 - 256	15 - 270	AA493118, and AL135744.
HCFMK27	412	576094	1 - 361	15 - 375	AC006388.
HCFMK49	413	576098	1 - 409	15 - 423	
HCFMK62	414	576097	1 - 423	15 - 437	AL031594.
HCFMK63	415	506251	1 - 365	15 - 379	
HCFML42	416	576667	1 - 451	15 - 465	
HCFMM81	417	506250	1 - 468	15 - 482	AC006406.
HCFMN07	418	953522	1 - 150	15 - 164	AC006978.
HCFMQ64	419	805822	1 - 664	15 - 678	R16166, AW245400, AI092564, AI298418, AII190180, AL135607, AA255476, AW341937, AA774687, AA232248, AI675174, AI356983, AA770006, AI500630, AI200144, AI339987, AW071871, AA350500, AA732754, AI080604, AI591153, AI090505, AI090526, AI619931, AI151262, AA765701, AI015327, AA173394, AA257977, AI857270, AW058653, AI858857, AI743631, AW131669, AI361482, AA171810, AA621676, AW072043, AA159603, AA165670, AA357206, AA070895, AI083788, AA643264, AA699650, AA373130, N29760, AW248832, AI401838, AI696781, AA086047, AI829320, AA232744, R44869, AA133807, AI089956, F09118, AI352487, AA369978, AA486761, AA182536, AA128868, AI699007, AA134215, AA977086, AI885043, AA232537, AA954867, AI086697, AA256882, AA457397, AA865872, AA757809, AA811925, AW377769, AA805830, AW006314, AI758593, AA045484, AI246878, AA421465, AI679033, AI587487, AI572423, T30157, AA515407, AW193414, AW085830, AI672912, AW196633, AA527495, AA568558, AA026270, AA594129, AI569433, AA864390, F03978, R51276, AW304405, AI017824, AI061053, AI074649, AW009091, AI560098, AA999878, AI888289, AI097160, AI587320, AW002779, AA725226, AI559525, AI017407, AI741332, AI911638, AI685232, AI890180, AW295035, AI991285, AW084565, AI859307, AA947282, AI090794, AI744955, AW182337, AA844680, AA535324, AI014459, H28345, AA357685, AI143713, R35871, AW129646, AA457115, AW044140, R67967, R26888, AI660218, M79078, AI742893, AI436778, AI718841, AW292472, AI818656, AA421496, AA664765, AA621134, AI719132, H65810, N74909, AW087942, AA457447, and AI811113.
HCFMT62	420	954213	1 - 560	15 - 574	AC006479.
HCFMY85	421	933017	1 - 298	15 - 312	AW362709, AF165294, AJ012376, and AF165281.
HCFMZ17	422	664132	1 - 475	15 - 489	
HCFNA30	423	772262	1 - 129	15 - 143	
HCFNB62	424	576446	1 - 336	15 - 350	AW002831, R69527, AA713735, AL118925, AA808982, AA745302, AA335519, AA429481, AW381847, AW381904, AA714073, AA364006, H43183, AA496309, AA577141, AA192366,

					AI207476, AA297698, AA676875, AA587078, AI915081, AA295865, AA295874, AW080215, AA367388, AA363027, R52008, AA477517, T83057, AA224807, H89581, AW117723, AA663074, AA522500, AI439393, AA630122, H43771, AA532875, AI271985, AI342183, AI798407, AA441810, AA728939, AA715418, AA225358, AW157731, T07346, AW377893, AA772704, AA513125, AA525807, R87275, AI271766, AI368732, AA715075, AI870453, AW074497, AL021368, AC000091, AL035405, AL022336, AF111168, AC008040, Z49236, AC004883, AC005829, AC007227, AC000378, AC006505, AC004851, AC005726, AC007308, AC008928, Z97056, Z95116, AC000353, AL133246, AC002126, AC006239, AP000555, AC002115, AL035249, Z98950, AC007546, AL031230, AL031905, AC007652, AC004703, AC005914, AP000103, AP000032, AL133448, AL031591, AJ251973, Z99943, AC005952, AL049758, AF196779, AL031848, AF002223, AP000704, AL021453, AC003042, AC002070, AF196971, U62292, AC006965, Z98884, AL021578, AC007637, AL023284, AC005088, AL117694, AC002511, AC005763, AL022238, AC005488, Z73900, AP000008, AC009516, AC006146, AC003663, AC006486, AL078581, AF196970, AC004821, AL031255, U95741, AF042484, AC004531, AC006111, AC005609, AC005874, AF134471, AL021977, AC002404, AL050308, AP000030, AC004583, AC004223, AC003108, AC005920, AP000269, AL135960, AJ131016, AC004228, AC003957, AF030453, AC005753, Z93930, U63721, AL080248, AL035659, AC004687, AF111170, AL022312, D87675, AC004611, Z84469, AF207550, AL117344, AC009802, AL008715, AC008055, AL035086, AC004098, AL049872, AL117258, AC004805, AC002563, AC004644, Z82206, AC005102, AC005086, AC002477, AL031587, Z85987, AC006463, AL020997, U07000, AL022311, AF067844, AL009172, AL133445, AL049843, AF001549, AC006163, AC005778, AC004967, AP000212, AP000134, AC005722, AC004030, AC004150, AC005531, AF006501, AF064861, AC004760, M87889, AC005081, AD000092, AL049692, AC005924, AC005551, AC010205, AC005206, AL049709, AC005899, AF196969, AC002400, AC006014, AC002565, AF039906, AC004985, AC002470, AB023051, AC006449, AC005736, AC020663, AL008726, AF039906, AC004985, AC005231, AC005972, AC004991, AC005755, AC006165, AL049793, AC006509, AC007363, AC005231, AL031659, AF176815, AC007225, AC005331, AL121825, Z84466, AC002551, AC007565, AC002314, AC005244, AC004881, AL022396, AC005229, AF001550, AC005332, AL109798, AC007226, AP000494, AC005667, AC005412, AP000689, AC007065, Z95152, AP000556, AC002492, AL122020, AL049779, AC004983, U91323, AL132987, AL109801, AL049569, AP000509, Z93023, AC004552, AC005011, AC005225, AC004770, AC005343, AP000014, AL031258, AL021154, Z98036, AL031284, AL049646, AL022320, Z93020, AC008116, AL031276, AC005786, AL031056, Z97630, AC004841, AC008134, AC004033, and AC004148.
					AC005999, AL031012, AL078602, AC002485, AL022164, AL031429, and AC005539.
			15 - 707	
			15 - 373	
		1 - 693		
		1 - 359		
	973548			
	576008			
425				
426				
HCFNK43				
HCFNO55				

					Accession Numbers
HCFNQ04	427	615351	1 - 888	15 - 902	T57391, N26420, AW340665, AI827647, AA280976, AA521364, AW340711, AI217472, AA429950, AW274378, AW340146, AI970154, AA906042, AI290997, AW188032, AC006208, and AJ003081.
HCFOB11	428	967196	1 - 126	15 - 140	AA648299.
HCFOE38	429	576005	1 - 302	15 - 316	AI801107.
HCFOF90	430	561625	1 - 529	15 - 543	AA229738, and AA229023.
HCFOG82	431	576007	1 - 380	15 - 394	T71466.
HCFOH56	432	577114	1 - 385	15 - 399	
HCFOI11	433	967195	1 - 316	15 - 330	AI066646, AI375684, AI755202, AI720301, AW130427, L42230, AC002128, AC005808, AC005327, AL031965, and AC008994.
HCFOL96	434	796104	1 - 482	15 - 496	Z30202.
HCFOO18	435	575965	1 - 387	15 - 401	
HCFOP42	436	460824	1 - 537	15 - 551	AA480486, AA469230, H81700, AA468356, AA502532, AW238495, AA018923, AI537800, AI609972, AA021561, AA768179, AA608561, AA362349, AA229159, AW392414, AA857812, H86221, AA429481, AA829036, AI267356, AA728861, H99700, AI279417, AA610233, AA773881, AA599080, AI648514, N91711, AI738863, AA558404, AI459733, AA715351, AA601680, N41775, AI267450, AA601212, AW302017, AI185394, H84412, AI471455, N70449, AA564925, W28961, AI280535, AA573000, H24957, AI340858, AI718323, AA376896, AI687343, AW440368, AA654482, F00688, AA351808, AA197019, AI583466, AI306232, AI251576, AA302661, AA297443, AI340700, AA302978, AA629852, AA228979, AI929796, AI933716, W63553, AA457754, AW328331, AA229823, AI253376, AW188742, AW150781, AA946848, AA507675, H67064, AA019003, AW328330, AI932871, H59651, N28624, AI306717, AL137946, AW274191, AA610381, AI249365, AL041375, AA362348, H58293, R69819, AI282629, AI249688, AA515168, AA648569, AC005318, Z95326, AL035088, L44140, AC007993, AC004859, AL133163, AC007056, L77570, AF130343, Z81007, AL080243, AP000503, AL021707, AB002345, AC004856, AF134726, U73644, AC004638, AC004985, AC000003, AC005005, AC005632, AL109967, AL008719, AC002306, M87889, AC006512, AL035400, AL034553, AC004646, AC005768, AC002985, AF207550, AF111168, AC004525, AC006455, AF111169, AP000348, AC005225, AP000349, AL023883, AC004587, AC005189, AC005696, AL096678, AC002350, AC004167, AC002064, AC003108, AC005027, AI023655, AC005569, U96409, AL109758, AC005207, AC005004, AC005071, AL022326, AC003007, AL031584, AP000350, AP000343, AP000555, AL022718, AC006050, Z94801, AC007057, AL049872, AC004817, AC002400, AL049569, AL009050, AC006017, AC005480, Z85987, AP000362, AC009300, AC006315, AL118497, AL022316, AL096791, AL034555, AC005952, AC007308, AC004030, AC006948, AL118497, AC002470, AC006013, AP000354, AC007684, AL031685, AC002302, AB015355, AF053356, AC006509, AL035448, AC006360, AL121653, AL035458, Z70280, AC004967, Z95115,

	No.	Clone ID			Accessions
HCFOP46	437	927654	1 - 390	15 - 404	AL049540, AP000229, AL034420, AC002310, AL117337, AC005483, AL121603, AL133500, AF141308, AL034374, Z97989, Z47046, AB020878, AL049759, AC005386, X58139, AF227510, AC007314, AC005666, AC006207, Y10196, Z98257, AL031228, U91318, AC005907, AC004134, AC006121, AC003982, AL031846, AC002565, AL034429, AC005730, AF205588, AC011718, AC008079, Z99716, AC004961, AC008273, AC004895, AL035405, AL031587, U82828, AF042090, AL008716, AC005244, Z84572, AC004408, AL035587, AC002504, AP001068, AC007773, AL009181, Z93017, AC008132, AL031277, AC007160, AL049776, Z83856, AC002365, AL035086, AC007325, AL031651, AL121658, AC007981, AC007685, Z69707, AL008718, AC009516, AP000500, AC004929, AC005837, AC004821, AC009721, AC006071, AC006064, AL049856, AC003077, AP000695, AP000694, AF172277, AP000553, AC004933, AC005940, AC004857, AF001550, Z84469, AC006262, AL034369, AC004808, AC003957, AC004933, AC005940, AC004857, AC004890, AC002524, AD000812, AC007386, AL022323, AC004996, AC002559, AC006111, AL133382, U62317, AC006453, AC002559, AC002312, AC005519, AC000029, Z83841, AC004222, AC004033, AC007099, AC007350, AC002395, AL031659, AC005102, AC007790, L81577, AC005186, AL096701, AL133245, AC018633, AC004039, AC004623, AC006026, and AC005344.
HCUAA60	438	670941	1 - 54	15 - 68	AI749002.
HCUAD58	439	738408	1 - 302	15 - 316	AW134410, and AL042629.
HCUAE70	440	959686	1 - 223	15 - 237	
HCUAG89	441	706427	1 - 417	15 - 431	AA342610.
HCUAG92	442	504395	1 - 314	15 - 328	T78930.
HCUAH15	443	916651	1 - 217	15 - 231	
HCUAH60	444	916621	1 - 218	15 - 232	AI249862, AA911187, W52505, AW118534, AI085242, H72530, AP000555, D86995, AC004787, Z68870, AL021154, AC004491, AC004142, AL109758, and AC004032.
HCUAH70	445	574164	1 - 280	15 - 294	R70107, R69934, AL031681, AC005387, and AC004821.
HCUAI71	446	959492	1 - 334	15 - 348	AL049830, AC007280, and AC003982.
HCUAK23	447	676289	1 - 240	15 - 254	AL133485.
HCUAK49	448	574256	1 - 279	15 - 293	AA502860, AA593267, AA558227, AI46638, F35659, T58118, AL137954, AI963095, H73081, AW028429, AW148792, AL042756, AI141675, AI215727, AW438916, AA487884, AI358501, AA579249, AI499094, AW069807, AW085991, AW193609, N27353, AW029280, AI884487, AI676218, AW130535, AI915068, T91187, R80865, AI761471, AI926681, AI860677, AI248679, AA680243, AI625570, AI039451, T65812, N66945, AI625468, AA383838, AA977743, AA629939, AI768952, AI125139, T08074, AA664535, R35972, AL048925, AI928866, AL037574, AA828662, AA339432, Z70688, AC003009, AC006252, AL080243, Z69650, AC005944, AC004167, AC005516, AC004141, AP000065, AC007766, Z84718, AP000351, AC003041, AL049745, AC004253, AC003665, AC005195, AC005668, AL031584, AC005666, S43650,

					Accession Numbers
					AC006128, AC005376, AL035587, AC008071, AC002349, AL096701, AC004531, AL049780, AL139054, AC006530, AC002477, AC005066, AL109802, AP000503, AC004066, AC006600, AF201337, AL049776, AL035450, AC005548, AC008372, AF151680, X14448, AC000125, U78027, AP000692, AC006539, AC004837, AL035422, AL021808, AC007227, AC004216, U66060, AF200923, AC006123, AC007748, AL035451, AC004955, AL031846, AC005914, AL049823, AL023880, AC006480, AC005566, AL080238, AL049699, AC002074, U95740, AC006354, AL021937, AC006559, AC005736, AC007536, AL023579, AJ239325, AL121655, AL022163, AC005924, AC004614, AC005060, AC007845, Z94056, AC004099, Z98884, AC002350, AC004963, AC005084, AC007056, AC004605, AF015155, AP000115, AC004638, AC006543, AL031588, AC003083, AL035461, AC005913, AC006449, AC005531, AL050321, AL049843, AL034420, AL049591, AL034343, AL009179, AB019437, AF111168, AC004797, and AL117375.
HCUAL07	449	953876	1 - 442	15 - 456	AI919285, AI091391, AI143678, AW152653, H92931, AW243238, AI863952, AI263430, AI308855, AA814965, AF079098, and AF079099.
HCUAM57	450	574375	1 - 313	15 - 327	T91791, AW071109, AI087055, AA338281, AA225175, AA525157, AA973913, AI348567, AI370548, AC004000, AL121769, AL049759, AL021940, AC008115, AC003108, AC008119, AC005288, AC005037, U96629, AC009464, AC007676, AC002349, AL079342, AL050317, U95739, AC007308, AC003101, AC003962, AL034549, AL136504, AC003962, AC005899, AF130343, AL122020, D87675, AL034429, AC004616, AP000141, AC003037, AC005067, AC004890, AC002992, AC007253, AC002302, AC007240, Z82203, AC004685, AC004491, AC004953, AC005391, AC004132, AC015853, and AC006211.
HCUAM95	451	727174	1 - 243	15 - 257	AA613766, Z82901, and AL136520.
HCUAN44	452	574154	1 - 499	15 - 513	AA985143, AL133245, AC009239, AP000500, Z97183, and AL020997.
HCUAN49	453	577897	1 - 163	15 - 177	AA651923, AA765019, AA668900, AA968447, and AC004968.
HCUAN72	454	850140	1 - 191	15 - 205	AL049709.
HCUAO03	455	924902	1 - 311	15 - 325	AA595705, AI886736, AA765409, AC005011, AF196971, AC006530, AC005520, AC006236, and AB020875.
HCUAO28	456	850062	1 - 334	15 - 348	T94088.
HCUAQ92	457	506688	1 - 279	15 - 293	
HCUAR07	458	953872	1 - 147	15 - 161	AW167136.
HCUAT07	459	953869	1 - 484	15 - 498	AL042660, AA633908, AI791151, AW339562, and AL021396.
HCUAU02	460	920694	1 - 140	15 - 154	
HCUAU16	461	574193	1 - 294	15 - 308	
HCUAX57	462	934633	1 - 294	15 - 308	AI243475, AW183326, H22954, and F04138.
HCUBB28	463	685493	1 - 225	15 - 239	AA569686.
HCUBB46	464	577238	1 - 327	15 - 341	

HCUBE26	465	810522	1 - 99	15 - 113	
HCUBE27	466	574097	1 - 407	15 - 421	AA381762, M78032, AA381747, AW339422, AA470490, AII198718, AI590404, AW404225, AL045108, H62550, AA297207, H54511, N41775, AI915081, F35684, AW440368, AW247389, R69819, AA856866, AA501807, AI306717, AI309943, AW440568, N67313, AA565911, AA678932, AW081610, AI538236, AI824476, T94988, T74524, N84161, AA714073, AA665532, H12857, AI823705, AI925065, AI025930, C06004, AW088631, N68449, AW238253, AI889995, AI271762, AA745351, AA513851, AA678616, AW078821, AI962030, AA018923, AA012829, AW088656, AI653776, AA126814, T07225, AW019964, AA749152, AA496309, AA644223, AW338860, AA581498, AI620992, AA468494, AA552586, AW390284, AA630122, AI347665, AA846923, AI457389, AI568659, AA701131, AI417586, T40629, AA297662, H01852, AW082104, R93919, AL041924, AW080118, AI648514, AW084173, AI472736, T52822, AA579399, H40478, AI561241, AW021007, AW086291, AA309362, AI860535, AA584756, AA331158, AI053934, AA601653, H07953, AA744048, AI955360, AA745383, AL120976, F08866, AI053597, AI889579, H25938, AW328446, AI277373, AI278440, N70449, AA599080, T54144, AA368359, AI598056, AA862312, N54538, AI445557, AA179659, AL041240, AW265688, C06210, T40799, AI445338, AW265279, AA878492, AA434078, M77908, C15504, AI278972, AI446336, AA189097, AI049630, AA586433, AL079809, AA218631, AW242031, AW408767, T92394, AA339923, AA744094, AA654038, AP000065, AL049576, AC004655, AL034418, AC002429, AC005037, AL109984, AL031848, AC002288, AC007055, Z99716, AL049776, Z93017, AC004882, U62293, AC006449, Z84480, AC006539, AL096701, AC005562, AC006238, AC005057, AL031311, AC006211, AC004000, AC002302, AC009516, AL031680, AP000252, AF111168, AL135744, AP000689, AC005884, AC007676, AC007993, AC004966, AC004644, AP000555, AP000131, AP000209, Z83820, U91321, AP000212, AP000134, AC005871, AL109628, AC005519, AP000208, AP000130, AP000248, AC007227, AC005488, AL049757, AC006101, AP000247, AL139054, AC006578, AC007878, Z69733, AC005261, AL022721, U91323, AC004531, AC004098, Z85986, AC005225, AB003151, AC005726, AF001552, AC003013, Z83826, AC004263, AL035249, AL121658, AC006480, AC005233, AC004491, AC006121, AL031597, AL031846, AC005071, AL031767, AP000213, AC000025, AL022165, AF146367, AC004938, AL049712, AL022323, AL133485, AL049569, AC006965, AC004855, AC007376, AC005015, AC005015, AC004031, AC004662, AL035409, AL109952, AL031282, L35533, AP000552, AC004876, AL096791, AC006581, AP000557, AC006285, AL121653, AJ003147, AL080243, AC002425, AC005800, AL049653, AC005060, AC004895, AC004253, AC006160, AC005081, AC004125, AC004859, AC002375, AC004520, AF111167, AL031291, AC008115, AC005180, AC005730, AC006515, AL024498, Z84487, AL035422, AF124523, AC004887, D83253, Z93241, AP000031, U95740, AC004409, AP000409, AP000356, AC005332, AC000353, AP000556, AL049795, AF109907, AC004878, AL133448, AF176915, L78810, AC003665, AL031657,

HCUBE55	467	1 - 376	15 - 390	AL022163, AL021391, AC004522, AL109758, AC005412, AC004216, AP000008, AL035587, AC006120, AC006014, AL021978, AC005911, AC004150, AL049829, AL031005, AC004019, AP000967, AF129756, AC005291, AC006958, AP000704, AC003950, AP000688, AC002527, AC004999, U85195, AC004814, AF165926, AC006487, AC006077, AC004817, AC004858, AC003029, AC005295, AC007308, AL034420, AC002036, AC006026, AJ246003, AL049631, AC005089, AC016025, AC005088, Z99496, AL022315, AL031781, AC003109, AC000052, AL022396, AP000044, AC004382, AC006001, AC006511, AL022318, AP000345, AC004983, U80017, AF200465, AC005280, AE000658, AC004771, AC007773, Z83844, AP000215, AL031733, AL035684, AC005529, AL035071, AC006396, AC005913, U95742, Z98950, AL022320, AC004963, AC005011, AL136295, AL031659, AC005005, AC007533, AC002554, AC005874, AF134471, AC005899, AL050307, AC007066, AC007277, AC007546, AL034451, AL049872, AL031427, AP000697, AL035086, and AC002511.
HCUBG79	468	1 - 177	15 - 191	
HCUBG83	469	1 - 206	15 - 220	
HCUBH45	470	1 - 121	15 - 135	
HCUBI13	471	1 - 375	15 - 389	H93071, H50664, AW086257, AI754336, AA634786, AW021583, AI939442, AL138396, AW008317, T91187, T40617, AI307201, AI192631, AI804138, U91321, U52112, Z29373, AC005229, AP000337, AB012286, AL109801, AC004966, AC005089, AC004638, AC006449, AC006049, AP000215, AC002553, AC006582, AB023049, AP000961, AC009069, AL031577, AL035703, AC006312, AC007057, U76377, AC004485, AC006253, AP000513, AC009743, AC012599, AL022238, AC005081, AL049539, AF095725, AC005231, Z68870, AL021394, AC003012, AC004864, AL049557, AC004099, AC006237, AC007151, Z82194, AJ229042, AC004841, AL049776, AL031427, AC004520, AL035494, U80017, AC006441, AC005274, AC004913, AL033518, AC005695, AP000079, AC005049, AL117340, AC005067, AL023575, AC004770, AL031807, AC005145, AL122126, Z94277, AC004974, AC005335, AL031681, AC007537, AC004887, AC005790, AL049576, AC000353, Z94721, AC008928, AC011604, AL080243, AL031665, AE000658, AC005324, AC005519, U85195, AC004257, AC005799, AC004820, AL031447, AP000354, AC005255, AC005827, AC005971, AP000959, AL132987, AC005255, AL079295, AC004253, X87344, AC004890, AC000069, AL049777, AL035683, and AL023576.
HCUBI14	472	1 - 99	15 - 113	
HCUBI15	473	1 - 338	15 - 352	
HCUBI38	474	1 - 533	15 - 547	
HCUBI43	475	1 - 115	15 - 129	AJ246003, and AL121658.
HCUBI49	476	1 - 144	15 - 158	
HCUBI74	477	1 - 388	15 - 402	

HCUBJ11	478	967484	1 - 314	15 - 328	D61636.
HCUBJ42	479	574265	1 - 312	15 - 326	
HCUBK01	480	917257	1 - 409	15 - 423	AI279417, AA558404, T05617, AI049955, AI568659, AI284536, AI251563, AA491423, AA610255, AI792695, AW302832, AI024511, AI792856, AL040816, AA629759, AA078384, AA635433, AW271095, AA381990, AL135377, AI948984, AI733946, AL039042, AL039041, AA775205, AI948959, AI733930, AA652910, H45698, AA838192, AA101744, AI792842, AI281622, AL043878, AI252190, T52745, AA557911, AA743968, AI815583, AW407632, AI732807, AI252141, AW328202, AI816537, AI280574, AL121287, AW337805, AI358712, AW275432, F01666, AI792746, AA847499, AI753672, AA642823, AW265155, AL048479, AA326452, AA324088, AI282629, AI798313, AL042373, AI245693, AI129421, AA326330, AA582746, AA683069, AW151018, AL118925, AA564925, AA303770, W24312, AL038977, AA460924, AI049845, AA772873, AI798041, AA579399, AI114657, AA536040, AI249365, AL096791, AC007025, Z82244, AC006312, AL049699, AC004185, Z97634, AC006026, AC007537, AC009247, AC007639, U80930, AC005670, AF157623, AL034402, Z98743, AC005725, AC005365, AC004668, AF006752, AC005338, AL021366, AC004963, AL117344, AC005072, AF024534, AC004031, AL050318, AC004254, AC005081, AL080317, Z97832, AL035495, AC005751, AC008123, AC002316, AC005086, AC004099, AC006012, AC004799, AP000109, AP000041, AL034549, AC000039, L47234, AL022238, AC007385, AC005952, AC006441, AL050332, AL049650, AL135744, Z83838, Z83826, AC006965, AC011331, AP000008, X62358, AL023807, AC002295, Z98747, AC002366, AF051976, AC004694, AC007773, AP000153, AP000704, M89651, AC000082, AC005300, AL031737, AL008712, Z97053, AL139054, AL031904, AC009294, AC008044, AC005587, Z99496, AC004531, AC007130, AC005661, AC003037, AL024498, AL023879, AC004778, AC007566, L81612, AC005037, D84394, AL022311, AF091512, AL132987, AC004663, AC006047, AL008582, Z83843, AC005736, AC005164, AL096803, AC000088, AC005088, Z99570, AL109628, AC000394, AP000509, AL008718, AC006236, AC000071, Z95118, AC004656, AF001552, AC005546, AC005695, Z84484, Z99716, AP000504, AL022326, AC004961, AC004686, AL080250, AP000347, AJ003147, Z95115, AC004013, AC006930, AJ010770, AL121754, AC004881, AC009363, Y12853, AC004097, AC005005, AC004922, AL049758, AC002544, AC005609, AC005666, AF130342, AC005753, AL117355, AC007565, AC005519, AL034420, AL049776, AC002545, AC005015, AC004921, AF129756, AC005632, AD000864, AC004851, AC005099, AC004750, AP000288, AC005280, AC005487, AL021578, AL031735, AC000353, AL049631, AL022717, AC003107, AC006597, Z82194, AL079304, AC009784, AC007201, U73643, AL031003, AL031387, AC003682, AL035461, AC007625, AC007899, AL024509, AC005041, AC007536, AL035462, AC005681, AL035460, AL021398, Z49208, AC005003, AC003012, U52111, AC020663, AC006946, AC004583, AL109963, Z83844, AL031447, AF001550, AJ229043, AL009179, AL109798, AP000501, AL096757, AL078638,

HCUBK36	481	850132	1-492	15-506	AB020877, AF087143, AI078581, AC006487, AC004132, AC007151, AC005568, AI035443, AL049792, AC006088, AC005011, Z84496, AC005225, AL031728, AL022718, AL021391, AL080239, AC007221, AC004771, AL035587, Z97352, Z68873, AC006237, AI236701, AC007546, and AF134726.
HCUBK39	482	577234	1-491	15-505	
HCUBK46	483	574120	1-368	15-382	
HCUBK49	484	574122	1-365	15-379	AI200051, AA714595, AW086257, AA317170, AA610438, AA342256, AL118947, F32705, AW408063, AW069807, AI358229, AI345518, AA526193, AL037291, AA663306, AI281881, AA557879, AA652057, AA649642, AA569468, T40617, AI499094, AA503168, AI963095, AL118911, AI049634, AA670126, AA743972, AA095511, T63597, N27353, AW088058, AA125788, AW265393, AW196798, AW023389, AW028429, AI150670, AW406447, AI281903, AL037945, AI061296, AI355206, AL041368, H58472, W07032, AW406659, AL138242, W07122, AL134703, F29989, AI365988, AL133862, AI865804, AA491814, AA747889, AW339687, AA516225, AI038990, AI635272, AA932099, AW302909, AW008317, AA228420, T59509, H86301, AI446474, AL042420, AA318652, AI912322, AW407340, H86264, AI708009, AL119123, AI352078, AA720746, AW316969, AI796627, AW439558, AL048925, AA640979, AL036523, AI633007, AA838479, AI679713, AI801482, AA947370, AA349854, AA838477, AA121919, AA878495, AA658235, AA804993, R44592, Z97198, AP000503, AF134726, AC005067, AP000275, AC004614, AP000037, AP000105, Z94721, Z84814, AC007130, AC007690, Z32772, AL008721, AC020663, AL031662, AC000086, AP000701, AL022098, AC004841, AB020869, AP000017, AC005365, AC006001, L78810, AC007051, AC007919, AC000070, Z93016, AP000884, AC005754, AC004477, AP000962, AC002045, AC005593, AC007395, AL096766, AC002349, AC004887, AC004891, U91325, AC004534, AL132712, AB003151, AP000688, AC004760, AP000159, AP000018, AC006111, AC004799, AC004820, AL031587, AL035450, AL096701, AC007240, AL080317, AC004991, AC005081, AC004814, AC007024, Z73358, U91319, AC003009, AC003005, AL035535, AL109758, AC006064, AC005329, AC005887, AL034402, AC005880, Z95152, AC002365, AC010175, AC005829, AC007970, U73638, AC004996, AC005164, AC005701, AL021395, AL078639, AC005376, AL022158, AP000349, AL109759, AF045555, U73645, AL121655, AC002072, Z86090, AL035604, AC005940, AL031769, AL049759, AF043105, AL049539, AC008372, AC008122, AC007001, AC004061, AP000557, Z98048, AC007444, AC004263, AC004755, U11309, AC006600, AL023802, Z74617, AC000125, AL031132, AL021154, AC003963, AC006254, AC003688, AF129756, AP000517, AP000692, AL096774, AL049633, AC012380, AL035420, AL023801, AF067846, AC007695, AC007537, AL022329, AC006322, AL008731, AC005019, AF207550, AL031291, AC007535, AC007537, AL022329, AC006322, AL008731, AC005019, AF207550, AC004896, AL022337, AC006275, Z98749, AP000350, AF001549, AC004881, Z85986,

					AL022323, AB001523, AC005520, AL078581, AC004675, AI003147, AB023054, AC004186, AC007245, Z83826, U86136, AC003101, AL031447, AL009181, AC005666, AC005345, AL135783, AL049636, Z98051, AF088219, Z93241, AL034419, AC005778, AC005777, AL022578, AC007237, AC005264, AB011147, AL022284, AC009516, AC005280, AC004408, AC004232, AC002117, AL133382, AL049635, Z86061, Z97181, AC005751, AC007387, AL109613, AL031257, AF095725, AC005003, AC004913, Z93783, AC007243, AL035587, AC004797, AL021307, AC004188, AC007327, AC000387, Z99291, AC005157, AC009721, AC006039, AL049780, AC005274, AC007993, Z97352, AL034420, AJ005683, AC005064, AC004081, AL023582, AL117352, Z93020, AC009501, AC005411, AB014086, U78308, D86998, Z69719, AC004467, AC008928, AL049591, AC002464, AC005785, AC004963, AL035410, Z68344, AC006079, AC004973, AC004222, and AL109827.
HCUBL12	485	739021	1 - 198	15 - 212	
HCUBL65	486	574201	1 - 297	15 - 311	
HCUBM86	487	577291	1 - 332	15 - 346	AL117328.
HCUBN07	488	953879	1 - 179	15 - 193	AA662395.
HCUBN21	489	577287	1 - 331	15 - 345	
HCUBN38	490	971421	1 - 172	15 - 186	AW089099, and AC004227.
HCUBN66	491	664536	1 - 135	15 - 149	
HCUBO08	492	959928	1 - 305	15 - 319	AC006388.
HCUBP69	493	526757	1 - 133	15 - 147	AL031683.
HCUBP89	494	850016	1 - 347	15 - 361	
HCUBQ76	495	575352	1 - 269	15 - 283	AI061235.
HCUBQ85	496	967074	1 - 327	15 - 341	AW328178, AW328000, AA501777, AA503770, AA749428, AC004854, AC005536, AP000547, and AC004621.
HCUBS58	497	522378	1 - 295	15 - 309	AA342137, F19690, AA069872, T78945, AA347735, R68248, AI453160, AI564294, AA632765, AI471467, AA181917, W01359, AC004983, AC007225, D87675, AC004851, AP000090, AF196969, AC004967, Z98941, AL031003, AF222685, AC005233, AC002126, AC006241, AC007382, AF130248, AC007193, AL035086, U07563, AC004778, AC000070, AL096702, AF075007, AC005529, AL080286, AP000689, AP000688, AC000025, Z83846, AP000354, AB003151, AL109758, AC005695, AL034554, Z97053, L44140, AP001052, AC002477, AC005962, AC004168, AL117337, AL021155, AC005226, AL031681, AL031255, U91321, AL133163, AC004228, and AL035460.
HCUBS72	498	577286	1 - 431	15 - 445	AI355281, AI978712, AA664521, AI076616, F31796, F31799, F37223, AA310117, AA077302, AW166611, AW131457, AL038936, F31465, AA133650, AI357823, AA448858, AA658846, AW408161, AI926366, AA482896, AL048544, AA133651, AW380074, AL079466, H21449, AI752978, H42075, AA482768, AI139971, C05928, AI860423, AL119295, AI701959, AW167372,

	499	920682	1 - 306	15 - 320	N27353, AA670108, AA338522, AA342901, AA576336, AA736963, AA347109, AA569206, AL037285, AI186233, AA354785, AI783494, AA342256, AP000555, AC015853, AF205588, AC004999, AL034423, AC003075, AC005031, AC005387, AC002036, Z99496, U80017, AC016027, AC016830, AC005920, AF134726, AC008984, AL078581, AC012085, AC005253, AC005519, Z98051, AC005385, AC004895, AC005828, AC003002, AC006139, AL121652, AL035400, AP000503, AC006544, AC006101, AL121578, AF140764, AC000041, AC004016, AC000025, AL021917, AL035397, AC004686, AB026898, AC006449, Z85986, AP000350, AP000514, AC002316, AL031295, AC006121, AC007533, AC006372, AC004655, AC007387, AL021453, AL109967, AL133304, AC007637, AC006430, AC001066, L81893, AL078472, AC007096, AC006077, Z83826, AC005011, AL049829, AC007151, AP000245, AC016831, AC004254, AC005237, Z99570, AL031662, AC004132, AL035587, AC005488, AC007666, AC007285, AC002037, AC003973, AC007707, AL008730, AC005200, AL022328, AC007050, AL009174, AP000704, AC002059, AC006992, AC007313, AC005081, AC007023, AC000105, I59642, AF106918, AC004779, AC005346, AC004791, AP000255, AL035424, AP000129, AP000207, AP000213, AC004996, AP000135, Z98044, AL009179, AL035684, AP000031, AL121877, AC004019, AC007221, AC005772, AC005057, AC004970, AC006285, AL021579, AL022329, AL023656, AC005839, AC005562, AC004383, AC003665, AC006432, Z93017, Z94161, AC006255, AC005280, U95742, AL021578, AL133163, AC000353, U52111, AC007688, AC005280, U95742, AL023279, AC005954, AC005520, AC005018, AL031864, AC007216, AC007685, AC007245, K03555, AP000008, AB000882, AL031311, AC002045, AP000962, AC004933, AC009399, and AL008719.
HCUBT02	500	574239	1 - 528	15 - 542	AI189587, AA705559, H47182, H47091, and AF147424.
HCUBT94	501	615547	1 - 372	15 - 386	AW026750, AA579906, and AL035090.
HCUBV04	502	506518	1 - 346	15 - 360	AW084004, AA364082, AA351808, AW089950, AA533660, AC005920, AF196969, AC005031, AC000025, Z83844, AC008101, AF047825, U80017, AC005520, AC004805, AC004851, AC006276, AL022238, AL050140, AC005695, AC005971, AL049869, AC006511, AC005214, Z75891, Z82180, AC005231, AL049780, AB029020, AF196779, AL139054, AC004263, AC005696, AC002319, AC007421, AC004796, AF053356, U95742, AF117829, AC005088, AC002477, AL050350, AC005015, AC005702, Z95114, AL117337, AC005409, AC004084, AC007216, AF001548, AC006443, AC004797, I34294, AL133448, AC004910, AL035461, AL034423, AL121825, AC002350, AL133245, Z94160, AC005519, AP000514, AC002301, AC002316, AC006139, AC005011, AC002430, AC003950, and AC004381.
HCUBX57	503	529702	1 - 329	15 - 343	
HCUBZ57	504	694720	1 - 247	15 - 261	AI341867, and AA608765.
HCUBZ86	505	574096	1 - 297	15 - 311	
HCUBZ88	506	506585	1 - 293	15 - 307	
HCUBZ96					

HCUCB20	507	1 - 415	574189	15 - 429	AL031295, AC002316, and AC005696.
HCUCC20	508	1 - 347	573901	15 - 361	AA988600, AA515224, AI282479, F13749, AI870444, AA747472, AW167909, AW438643, W21218, AW090629, AI962050, AW023975, AL135643, AA659083, AW419262, AI751162, AW162288, AI917271, AI307201, AI431303, AI688846, AI284640, AI471481, AA657741, AW029038, AI696793, AI345654, F36273, AW166815, AW193265, AA527954, AI350211, AL041854, AI904894, AL138421, AW193432, AI918421, AI653886, AC004821, S77605, AC006312, AL008715, AF165926, AC006960, AC005412, AL008635, AC004491, AC002449, AC009225, AL031670, AC008009, AC004985, AC005874, AF134471, AC004382, AC004675, AF088219, AC004797, AC005220, AL109801, AC003681, AF205588, AC020663, AC006111, AL035587, AC006992, AC007676, AL034376, AC005696, AC005695, AL035086, AF003626, AL022313, AL121655, AP000347, AL035460, AC009248, AC003110, AL035413, Z82097, AL031584, AC004972, U62292, AP000346, U82671, AL096791, AJ251973, AC005034, AC004685, AC007878, AC007292, AC004690, AC005821, Z93930, AC004834, AP000240, AC004263, U52112, AF196971, AC005594, AL022322, AC006543, AC005776, U63721, AC006241, AL136295, Z97054, AC004098, Z82244, AC004991, AC004084, AF190465, AC000353, AC004103, AE000662, AP000553, Z83844, AC004837, Z84477, AC003047, AC007277, AC006101, AC006571, M94081, AL008729, AL033527, AC006544, AF045555, AC002369, AC005255, AC002301, AP000289, AL080276, AL096677, AL021391, AP000501, AC005041, AC005482, AC006552, AP000042, AP000110, AC006511, AC007666, AC008984, AF155238, AC005037, Z97056, AR036572, U91328, AC002316, Z94160, AL121603, AL117351, AL079295, AL078471, AC022237, AC007731, AF129756, AP000339, AL049761, Z99570, AL008583, AL022237, AC006480, AC007151, Z95113, AC002543, AC002470, AB026899, AP000217, S42659, AC006480, AC007151, Z70288, AC005702, Z70288, AL132987, AC004678, AL022334, U02054, AC006251, AC005702, Z70288, AC005514, AC005619, AC004126, AC008064, AF037338, AC005664, AC002289, AC004841, AC005403, AC002326, AC005553, AL022476, AC005377, AC006538, Z97183, Z85986, AL035986, AL035403, AC002326, AC007051, AC004500, AL109758, AL031587, Z99129, Z82245, AC005071, AC007387, AC007308, AP000355, AC005003, M87923, AC005094, AL031681, AC005071, Z68273, U95742, AC007308, AP000355, AC005003, M87923, AC005094, AC006547, L78833, AC004859, AL022323, AC007919, AC005003, M87923, AC003065, AL132712, AL031281, AC004883, Z69890, AL096701, AL049830, AC007216, AC003065, AC003007, Z84469, U89337, AC003688, AL034417, AC006057, U73634, AC004933, AL049869, AC004216, AC007055, AL031005, AC000075, AC002365, AL031735, U73168, AC005330, AL009181, AP000269, S70707, Z84466, AC002365, AL109963, AC006276, AC006064, AL034384, AL049540, AC004447, AP000500, AL020997, AL109963, AC006276, AC006064, AL034384, AL049540, and AF134726.
HCUCC78	509	1 - 291	577129	15 - 305	AL022318.
HCUCC96	510	1 - 229	796530	15 - 243	AW005018.

HCUCD26	511	574098	1 - 226	15 - 240	AB020868.
HCUCD82	512	780047	1 - 329	15 - 343	R22017, AC004787, and AF165926.
HCUCG21	513	671210	1 - 463	15 - 477	
HCUCI43	514	715488	1 - 203	15 - 217	D60319, D60589, D60408, D61144, D60853, AF119569, AF091501, and AF087651.
HCUCJ90	515	967501	1 - 65	15 - 79	AC007032.
HCUCT08	516	959910	1 - 531	15 - 545	
HCUCT48	517	720905	1 - 245	15 - 259	
HCUCV13	518	574121	1 - 310	15 - 324	
HCUCV20	519	694398	1 - 250	15 - 264	
HCUDA38	520	862089	1 - 344	15 - 358	
HCUDB13	521	578712	1 - 323	15 - 337	AA936845, N73060, N73203, R14903, AA988600, AA595504, M78131, AA774006, W68328, H15294, AI049504, AA364863, AW131417, AA077619, AA477517, H53101, AA665304, AA457230, N57709, AL037006, R38509, H58786, AI791561, AA173334, AA525407, H10454, R48980, AA636102, AI479068, AA225548, AA321595, N22153, AW192518, R82835, AW073498, H09639, AI929410, AI753672, AW019964, AI750950, AA693806, AA629412, AA479337, AI273675, AA296958, C14599, AI268564, AA706094, AA831801, C14880, AI138918, AA741020, AI367222, AA832016, AI371804, AI860535, AW276933, H63220, AW103407, R83708, AC009399, AP000128, AP000206, AP000245, AC005529, AL008715, AL034420, AC000025, AC005527, AC009247, AC004531, AC002407, AP000688, AC011331, AC002990, AC004466, AL008718, AC004540, AL031803, AC002381, AC006077, AC005351, AC005901, AC005822, Y11107, AC000086, AL133275, AC004910, AC006042, AC007919, AC006417, AF006487, AC004383, Z99716, AF111168, AL035587, AC005972, AL031577, AC006275, AC002301, AC002351, Z97054, AC007055, AC007537, AC002120, AC005291, AL031428, AF027974, AC000353, AL034419, Z95331, U72845, AC004955, AL031255, AC005088, AC004587, AC002563, AL133448, Z85986, AC005209, AL109963, AC007263, AC005480, AC007540, AP000116, AC005231, AC006388, AC000066, AC004000, AC005049, AC004851, AL035415, AC002073, AF134726, AC009509, AC005585, AL021154, AL118516, AC007227, AC007201, AC005071, AL096775, AC005740, AC005921, AP000555, AC004983, AL121915, AL049766, AC004139, AL049830, AC007226, AC004908, Z98752, AC007536, AC007559, AC004036, AC005037, AC005578, AF092925, AC006059, AC005486, Z98941, AC007028, AJ010770, AC005064, AL078581, AC005971, AC010168, AL033527, AC002072, Z82178, AC005796, AL109952, AL009181, AC005722, AL024498, AC003962, AF141308, AC004054, AL049699, AD000812, U91324, AP000252, AL024498, AC004125, AC005521, AC005479, AL034418, AC008044, AL021578, AC005722, Z84474, AC005521, AC005399, AL121825, Z74739, AC006344, AL031685, AC004694, AC007899, AC004125, AL023581, AC006071, AC004019, AC005821, AC000026, AC005005, AL035422, AL133249, AC006365, AC004817, U95740, AP000212, AP000134, AL109984,

HCUDC45	522	576566	1 - 379	15 - 393	U63721, AC003036, U69639, AC005520, AP000692, AL049869, AC004904, AC003670, L78810, AL139054, AC009721, AC005082, AC004017, AC004797, AC004084, AC004491, L13712, U93305, Z68281, AC005778, D84394, AL133353, AC004678, AL049829, AC005600, AC007542, AC006226, and U85195.
HCUDC79	523	576577	1 - 154	15 - 168	AC007324, AC008079, AC008101, and AC016830.
HCUDD19	524	959706	1 - 1796	15 - 1810	AI184562, AW248599, AW051528, AA447350, AI740715, AW316672, AW316654, AI952004, AA977191, AW363318, AA703205, AA149973, AA135413, AI799559, AA459866, AI023370, AW264927, AW264916, N93625, AW297503, AI192819, W68805, AA402761, N53321, AI207204, AI809102, AA804623, AW057780, W68607, H80704, AA398493, H80394, H14357, AI581914, H51962, AI873736, AA300679, AI689515, T33180, H80494, AA555067, AA764994, H68164, H68165, AI807729, AI693622, AI273514, AI932990, H80705, N48174, R92093, AI342079, AA903178, AL037469, D61862, H81412, AA460510, W25416, R92092, T24613, AA280237, AI493508, N74148, AA281536, AI525850, C20784, AW438613, AA923003, AI094325, and AB002330.
HCUDD43	525	850103	1 - 263	15 - 277	AI349874, T39598, AA581903, AA630352, AI890928, AW023511, AI890570, AI859251, AA484148, AA702023, AA309460, AI334435, AW074398, AI561335, AI110770, AA226364, AW193546, AA342901, AL120502, AI266576, AI536555, AA715270, AI679706, AI612152, AI679132, AI287651, AL079683, AI446464, T63104, AI252114, AA177061, AW270270, AI792903, AA916039, AW162489, AI734002, AI358343, AI148277, AI279165, AW074207, AW338086, AI061227, AA523688, AI120687, AA587256, H60143, AI064864, AI252085, AA451612, AL138265, AW303876, AA348311, N66776, W47480, N64437, R44592, AI792864, AI733957, AL119984, AI053672, AI471481, AA744110, AA441788, AI334443, AL040130, AA594215, AA553465, AA491814, AA481363, AA652057, AA481375, AA649642, AI742771, AA386111, AI246796, AI674873, AI287451, AI274431, AA501722, AI610159, AL048925, AW341892, F19156, F36273, AI830390, AL041382, AI284640, AA483034, AI613261, AA125788, AW327360, AL040547, AI493634, AW172727, AW265009, AL137954, AA515938, AA578141, F03097, H92005, W45336, F35113, AI110760, AL119691, AA559290, AL049831, AL049697, AB020871, AP000193, AL109981, AL023281, AC005565, AP000117, AC004983, AC004021, AC006126, AL031293, AC005274, AL023575, AC004019, AP000049, AC004475, AC005089, AP000311, AC004067, AC007065, AL080243, AC005158, AC005086, AB020870, AC002564, AB020859, AL096701, AC005412, AL096829, AC006277, AC005483, AP000334, AC002522, AC004941, AC004616, AL049869, AL049757, AC002287, AP000160, AL031430, AC005104, AL035684, AC000095, AP000173, AC002429, Z81369, AC000052, AL031430, AC005104, AL035684, AC005184, AF072711, AL079295, L14752, AF111169, AP000023, Z98885, AC005037, AL035249, Z68871, AL078472, AP000018, AP000160, AC004924, AC005159, AC009227, AC006482, AC005231, AC004813, AF047825, AL023807, AC006387, AC007934, AC005793,

					AL049795, AC006137, AL021707, AL031983, M86181, AC007312, AL022722, AL121603, AL096768, U95743, AC002472, AC004987, AC000021, AC002428, AC006079, AC004050, AC004241, AL049575, AL021154, AL031255, X06123, AL022238, AC006556, AC006273, AC007565, AF020503, AP000555, AC004559, AC005899, AC003003, AJ239321, AC006205, AC005324, AP000967, M26434, AL136504, AF164343, AC005330, AC004534, AL079340, AC002519, AL021918, AC004817, AC004447, AL031296, AC007242, AL031256, AL049830, U89335, AP000692, AL031769, AC004755, AL031224, AC002485, AC006023, AC006317, AC002368, AC005924, AC004851, AC007707, AC007463, AL031686, AL050318, AP000043, AF109907, AL133396, AC004232, AC002301, AJ003147, AP000961, AC006071, AC005512, AL136018, AP000338, Z94721, AC006315, AC005913, AC002492, AC003080, AC007676, AC004383, AP000047, Z82201, AC004695, AC005822, AF111168, AF165175, AL034420, AL110502, U60061, AL031662, AC004776, AC007564, AP000216, AP000352, AB002059, AL035420, AC002470, AC000003, AC005666, AC007664, AC007214, Z82216, AL035073, X61109, AC005821, AL022328, AC005919, AC008179, AC004763, AC007537, AC004893, AC005838, Z93024, AC007076, U95742, AC007216, AL034554, U78104, Z77249, AF088219, AC008984, AL008708, AC007161, AL023755, AL121767, AC002070, AC005503, AC004650, AC000372, AC005694, AP000065, AP000115, AC006070, U58047, AC005994, AC004933, L24094, AL132641, AC018633, and AL022163.
HCUDD57	526	734883	1 - 373	15 - 387	R91783, AW449624, AI792255, AA632429, AA632442, and AA573692.
HCUDE23	527	953868	1 - 356	15 - 370	R62551, and AI174377.
HCUDE38	528	850076	1 - 324	15 - 338	AA551398, AI690497, AL031577, AC005971, AF109907, AC007546, AC006077, AC007773, AL031666, AL049843, AP000208, AP000130, U91321, AF196779, AC002300, AC007880, and AL034417.
HCUDE47	529	861150	1 - 789	15 - 803	AW139719, AI911432, AI288208, H39195, R42796, AI093947, H40911, H23589, H46892, R42704, H40952, H46310, H52787, H52820, H41504, AW075323, and AW071240.
HCUDF26	530	676949	1 - 436	15 - 450	
HCUDF33	531	577224	1 - 295	15 - 309	R02571, AI032037, AA679303, AA642557, AA345400, AA551532, N53352, N58999, AA985662, F18098, AA007330, AA767276, AA703457, AL046094, N64205, AI479093, AL009174, AC006238, AC004662, AC006530, AC004491, AC005781, AC005740, AL049780, AC006597, AL049911, AC005856, AL109628, Y14768, AC004408, AP000505, AL030996, AC004003, AC005874, AF134471, AC002351, AC002375, AC004933, AF117829, AC004648, AL135959, AC000105, AL078611, AC005102, AC004232, AF129756, AL117344, AL031577, AC002302, AF001549, AC002301, Z99774, AL031733, Z15025, Z98036, AC005105, AL049759, AC006961, AC005899, AC005663, AC004821, U91322, Z79997, AP000338, AC004125, AP000216, AJ003147, AC003103, AC004000, AL008718, AC005500, AC005500, AC007225, AC002314, Z97200, AF126403, AC008372, AC004990, AL078460, AL109758, AL035088, AC007276, AL022330, AC002378, AC007227, and AL035089.

| HCUDF90 | 532 | 958449 | 1 - 459 | 15 - 473 | AA747777, H71827, AA378822, AA378821, AA573020, AA810269, AA503154, AA451612, AA095511, AA837058, AA644538, AA533725, AA985455, H81785, T29180, T52733, AA593247, F00290, T53607, F31204, AA493708, R31948, T69435, AA176717, N22424, AA861959, AA804962, AA112778, AA780797, AW050498, AI446464, AA564264, AW406755, AA148489, AI365988, AA192695, AI954260, AI358229, AA535661, AA143516, AA598494, AA578349, AA357937, AW088984, AW339687, AA503473, AA908349, AI635272, AA401022, T51102, AI499938, T72601, AI305766, AI920877, AI624698, AA059154, AL133723, AI278997, AI744188, T55213, AA640034, F37286, AA657918, AI827234, AA494163, AA365694, AA805230, AA218645, AA911519, AA169194, H12334, R77608, AA669840, AA371533, C19058, W38648, T06647, R81240, R64515, AA515128, AI064864, AW338086, H71429, R45369, AA098922, H53522, AA533450, F34795, AA121333, AA364429, AA176114, N54934, AC004605, AC004964, AC012599, AC003684, AC005696, AC007845, AC016025, AC005069, AF117829, AC005736, AB003151, AP000688, AC006277, AL078477, AP000689, AC004858, AF109907, AF069291, AR000118, AJ229042, AC016027, AC007751, AC016830, AC020663, AL031577, AL135744, AJ239322, Z86061, AC016026, AC004854, U96629, AC004675, AP000556, AP000557, AP000552, AJ246003, AL031668, AF038458, AL133245, AC005740, AC006374, AL009174, AF131217, AF001549, AF088219, AC004216, AC005839, AL008582, AL023575, AL121658, AC002349, AL031905, AL132718, AF010317, AP000114, AP000046, AC005409, AC004019, AP000473, AF124523, Z68322, U95743, AL022726, AL121603, AC005031, U95742, AC018633, ACQ02133, AL020997, AC008372, AC005730, AC004765, AL035587, AJ238481, AC007510, AC005412, AB020858, AC005191, AC005775, AC007324, AC006597, X69953, AC006001, AB023049, AC005373, AL117330, U80017, AC005399, AC004596, AC006251, AL034420, AP000432, AC007773, AL022394, AC006273, AC005242, AC003030, AP000356, AC005666, AC002316, U82696, AC000353, AC006958, AF165176, AF064863, AL034379, AC006130, AP000705, AC000379, AL023879, AC000052, AC001164, AC006285, U91326, AC005772, AC004184, AC006525, AB020867, AF064861, D15054, AC007050, AC005728, AC005280, AF139813, U73634, AC006465, AC006312, AL022323, AC004139, AL035089, AC004770, AC004186, AL109799, AC004228, AC002070, AC002312, AC007314, AL031770, AC003681, AC005859, AC002051, AC002310, AL080243, AL031283, AC004894, AC005231, AC007666, AL031255, AJ011930, AL022320, AC007686, AC008018, AR036572, U91328, AL031281, D14034, AC005837, AC008033, AC006948, AL021808, AC002544, AL049760, AL032821, Z84466, AC006208, AL109654, AL049757, AC004492, AC006441, AC005067, U07562, AC006208, AC009516, U63312, AL049776, AL049832, AL133668, AC006430, AF002993, D87675, U47924, Z83840, Z98950, AP000502, AC005379, AL035668, AC006430, AJ003147, AL022328, AC004975, AC006121, Z84477, AC002369, AC004531, AC007099, Z83820, AL031670, AL035460, Z83844, AC004470, AC005082, AC005261, AC004671, Z85986, AC005913, AC007227, AL033527, AL078603, AC005906, AC005906, AC002066, AC002066, AP000352, AC003682, |

HCUDH64	533	717894	1 - 392	15 - 406	AC005104, AF035397, AL049696, AC004878, AC005157, AP000460, AC006449, AC005529, AC004386, AL021937, AC005901, AC006042, AL096712, AF003627, AB023054, and AL035458.
HCUDH84	534	713524	1 - 367	15 - 381	AB022698, AJ007628, and AB022699.
HCUDJ91	535	861025	1 - 303	15 - 317	
HCUDL94	536	915821	1 - 353	15 - 367	AI623889, AI934811, AI934751, AA687180, and AF053356.
HCUDM23	537	462283	1 - 376	15 - 390	AI003172, W60516, AI051551, AA557325, AA299087, AI149915, T79003, AL041368, AI857261, AA365347, H51054, AA313078, AI499094, AA350859, H64560, AI205126, AA443390, AW276827, AW088616, AI879000, AI350211, AI032878, AW069807, AI719080, AL041412, AA364567, AI469878, AA327572, AW265214, AW193432, AA329192, AA551509, AA381666, AI653515, AI915075, AW277102, AI679639, AI341664, AI193007, AL046696, AI061334, AI204076, AW339568, AI471481, AI359285, AW078495, W04302, AI653434, AL046409, AA365587, AI289067, AA584749, AA340960, AA580662, AW303876, W25284, AI305766, AI686431, AI124660, AI761471, AI421213, AW023672, AI762575, AI678392, R23777, AI914706, H13868, AA847216, AI719644, AA377730, AW074398, AI284640, AI538399, AW193265, AA659083, F31204, AA344959, AA229785, AW264973, AI110770, AI610159, AA593060, AI282907, AA641989, AA507990, AW057699, AI536625, AI284467, AI688846, F28576, AI806850, AA973575, AI569086, AA515128, AI634384, AA071182, AI038279, AW337985, AW419262, AI815000, AI079910, AA679810, F36273, AW261871, AI889781, AI431303, AW130799, AI653886, AI445436, AI890052, AA457639, AI742771, AI814735, AI963786, AI613280, AI963720, AL079645, AI474713, AW338869, AI923140, AI133235, AL138421, AL042856, T10218, AI547286, W28786, AF150222, H64777, T34066, AL047643, AA460367, AW157326, AA128576, AA515435, AA339432, AA359958, AI049634, AW175641, F19258, AI124779, T80500, AA579140, AC004495, AC007151, AL109799, AC004041, AL008634, AC005225, AC006396, AL031770, AC005701, AC005589, AL078580, AL080278, AC004655, AC000075, AC005164, AC005664, AC000097, AC006547, Z94721, Z94056, AP000459, AC008080, AL132642, AL031287, AC003086, AC009288, Z95113, AC004100, AC004861, AC007252, AL078584, AC005193, AC007536, AC004985, AC006559, AL050305, AL050097, AL022327, AL035252, AC007501, AJ003147, AC006143, AC002364, L81648, AC004220, AL031012, AP001038, AL021937, L13713, AF015171, AL049565, AL049871, AC005881, L13714, U85195, AC004900, AL049589, AL137191, AC005486, AC007032, AC006323, L76568, U34879, Z93023, AC004875, AC004953, AC006050, AC007263, AE000658, U63312, AC005217, AC004097, Z93241, AL033521, AL034350, AL035461, AC007040, Z82900, AP000468, AL109802, AJ011932, AC013248, AC004756, AL096774, AC002538, AL034373, AL078615, Z82210, AC005375, AC007159, AC006556, AP000556, AC007312, AP000552, Z65382, AP001170, AF038667, AC000381, AF003627, AC005876,

Clone	No.	Clone ID	Residues	Residues	Accession Numbers
HCUDM66	538	506522	1 - 367	15 - 381	AC003964, Z83827, AL034548, AL031680, AC009223, AL132992, AB017652, Z97053, AL033392, Z69666, Z84479, AC005781, AC004645, AL109801, AC003002, AC007038, Z98744, AC005911, AL031390, Z81369, AP000477, AL035400, AL079295, AC020663, AC007551, AL133371, AC007656, AC006111, AC005390, AF095901, AC005923, AC004946, AC005002, AL031295, AF064865, AC005046, AC004222, U52111, AC006953, AL133353, AC006125, AC004789, AL080242, AF045555, AC005057, AC002119, AC005064, AL031848, AL132708, AC009247, AL021918, AL021368, AL109758, AC004010, AC004859, L13709, L13706, L13707, Z99495, AC007917, U18391, U57009, AF140763, Z98883, AC002306, AC004755, AC004403, AC000127, AC005355, AL034418, AF038458, AC000066, AB020859, AC005231, AC006409, AL031657, AC004990, AC005150, AC007011, AJ010770, AC005274, Z77894, AC000025, AC006006, AC005552, U67230, AC006124, AL096761, AL023799, AB020871, AL022143, AP000855, AC005243, Z98304, AC003037, AC005527, AF042090, Z97054, AC002055, AC004967, AB029343, AB023059, AC004195, AC004076, AL031223, L47234, Z84718, AC005210, AF091512, AL078462, AJ239318, AC004745, AP000509, AL096862, AC006539, AL031666, AC007030, AP000351, AL009181, AC006374, AC005822, AC005245, AF196779, AL121823, AC002980, AC004051, AL031054, AC007364, Z95114, AL080239, and AC005084.
HCUDN09	539	850101	1 - 456	15 - 470	AI090115, AI168683, H99504, AI147670, AA232645, N73285, AA374707, AA380875, AW139567, AA886361, AI735132, and AI679526.
HCUDN14	540	862119	1 - 400	15 - 414	AL021368.
HCUDP19	541	578721	1 - 345	15 - 359	AC005755, AC005372, AL049780, and AC005081.
HCUDP23	542	783051	1 - 444	15 - 458	AA278441, AI263438, AI870837, AI886871, AW450567, M78087, AA887815, AI700532, W94450, R96854, and R98160.
HCUDP27	543	725155	1 - 427	15 - 441	AI538514.
HCUDP82	544	578720	1 - 337	15 - 351	AI970020.
HCUDQ61	545	839959	1 - 318	15 - 332	U77321, U90095, AC002403, and AJ006345.
HCUDS61	546	578705	1 - 390	15 - 404	AW057640, AA410949, and AI394291.
HCUDT62	547	747131	1 - 320	15 - 334	
HCUDT65	548	915742	1 - 1845	15 - 1859	AF039235, AI669256, AW245958, AI763048, AW245514, AW237088, AI093187, AI571378, AW296090, AI354976, AI680102, AW119180, AI140327, AA934553, AI201269, AA559846, AI991982, AA625161, AI203368, AA040597, AW268813, AW152391, AI243335, AI185996, AA315994, D80898, AI887841, AI902903, AA497000, AI312767, AA373939, AA358918, AA634307, U25751, AI916936, AI700879, AA918570, AA362530, AI671153, AI927665, AI738973, AW087508, AI824923, AI810550, AA359868, AW196382, AA738423, D80899, AA954586, C01220, AA489585, F31194, AA361102, AI698559, D20015, W81431, AA928147, AI432152, T27188, AA040679, T19862, and T27189.

HCUDW37	549	859268	1 - 895	15 - 909	
HCUDW74	550	576240	1 - 246	15 - 260	Z84480, and AC005011.
HCUDX05	551	951165	1 - 37	15 - 51	
HCUDX14	552	571370	1 - 307	15 - 321	AC002477.
HCUDZ25	553	678365	1 - 295	15 - 309	
HCUEA58	554	579029	1 - 303	15 - 317	AL031729.
HCUEA63	555	745183	1 - 354	15 - 368	AI826761, AI355007, AI085719, AW338042, AI149478, AA650365, AI733856, AI742168, AA455483, AA297666, AA226153, AA481887, AI310343, AA410788, AL135108, AI216151, AW316969, AA744018, AI061313, AW156980, AW270771, AI829331, AL045077, AA555229, AA651632, AI053978, AL037910, AI620415, AA679625, AA228778, AA021429, AA737309, AA503468, AI244127, AC003037, AL049776, AC005399, AL022316, AC007388, AC005015, AC005529, AC005274, AC004067, AC004967, AL132777, U63721, L78833, AC007308, AL050318, AL021154, AL022323, Z82206, AL031767, AL031589, AC005280, AP000210, AP000132, AC005231, AC006312, AC016027, AC016830, Z93017, AC005081, AL049869, AF111168, AC000159, AC005409, AC005913, AC007011, AC004755, AC004156, AC002310, AC005291, U62292, AL109628, AC008498, AL035417, AF196779, AC005340, AC009247, AL021808, AC005953, AC005043, AP000557, AC003043, AL133448, AL049692, AC003101, AD001502, AC004491, AL022318, AC005074, AL049539, AL096703, AC005971, Z98742, AP000098, AC006211, Z97056, AL021707, AC002302, AC007227, AC003007, AC005519, AC005722, AP000114, AC005821, AC004686, AC020663, AL117352, AP000502, AL109952, AC005800, AC004890, AC005881, AC007536, AC005632, AC005209, AL078477, Z93244, AL020995, U91323, AC005330, AL035420, AC003665, AC004000, U91326, AC004983, AC005412, AC004383, AC002544, AC005940, AL022476, AF134726, AC002375, AC009509, AL121652, AL096791, AL031846, AL035400, AP000556, AC004876, AC009516, AC005200, U52112, AP000514, AL049843, AL035587, AL121748, AC010170, AC004805, Z99128, AC004738, Z84469, AP000356, AC002316, AC009044, AC006023, AC007637, AC004526, AC007371, AC005943, Z83840, AF001549, Z85987, AC005921, AC004910, AC005484, Z85986, AC007999, AL008719, AP000553, AC006077, Z95152, AC004832, AC003663, AC002470, AC005089, AC002404, AC006121, AC007114, AC004913, AC007664, AC005158, AL035422, AC002425, Z93023, AC004841, AL031657, AP000510, Z83844, AL034548, AF124523, AL133245, AL022165, AL049830, AC010205, AC000029, AC006509, AC002045, AL035419, AL031774, AC004785, AC002996, U52111, AC005740, AC009288, AC008018, AL049832, AL031295, AC004638, AL133163, AC005962, AC006449, Z84480, AC002070, AC004084, AC005069, AC004874, AC004771, U85195, U78027, AL096755, AL049829, AC005837, AC005300, Z99716, AC005520, AL133246, AC005049, AL020993, Z82244, AC006581, AL133244, AE000658, Z83820, AC004815, AC004099, AL109984, AC002550, AC006511, AC006271, AC003982, Z97876, AC005523, AC004583, AC006265, AC005088,

HCUEA72	556	713040	1 - 311	15 - 325	AC004896, AC005220, AC006960, AP000248, Z84466, AC004895, AC000353, AC005544, and AL031291.
					AW084919, H67179, T58440, AI708182, AI141130, AA586433, H52397, AI865087, R56848, AI566425, AW270183, AA721523, AA721530, AI962094, H61871, AA610433, AA292003, T89901, AA746911, AA374797, AW419389, H61942, AI697242, AW407340, W02189, AA069631, AA568314, AA809635, AA224917, AI697239, R69937, AI266359, AI749335, H71678, AI066711, AA666046, AI686470, H73306, T97896, H07953, AI583468, AI538214, AA071151, AL079666, AI697235, AA214042, AW074613, AA084076, AA468486, N70449, H13612, H01327, AA329565, AA032001, AA715955, AA525253, AA706495, T55992, AA601216, AA054085, AW152178, T81513, AL133749, H81267, AI858889, AI251576, W37651, AA747234, AA572784, AA513884, AI306232, AI583466, N52410, AA613754, AA249239, AC004859, AC005335, AC005332, AL096701, AL022069, AC006064, AL096773, AC004686, AC005291, AF001550, AC005005, AL121603, AC007773, AC004999, AC007637, AL109758, AC002544, AL021391, AC016027, AL133500, AC016830, AC006241, AC005102, AL031284, AC000052, AC005971, AC004216, AL049709, AC004000, AC005747, AC005375, AC008372, AC002477, AB023048, AC003664, AC004448, AL117338, U91323, AL020997, AL133163, L78810, AC008012, AC006130, Z86090, AC005280, AL035398, AL049653, AF196969, AC004253, AC005736, AC005919, AF019413, AL024508, AC006441, AL008720, AC002059, AC009399, AL023807, Z84487, AC005015, AF111168, AC006509, AC006121, Z95152, AC004801, AC004134, AL034420, Z83843, AC009247, AC001228, AL049775, AF190465, AC004832, AC007298, AF001548, AC004810, AC002312, AC007325, AC004791, AC004106, AL035683, AL021707, AL031683, AC004672, M63796, AC002476, AC004938, AC007312, AL050307, AL031659, AL022238, AL050341, AJ238093, AL022322, AP000511, AF196972, AC005057, AC009464, AF217403, AC003687, AC000394, AL031657, AC004812, AP000032, AC006023, AC004019, AC005808, AL049636, AC002351, U07563, AL008707, AL079304, AC005288, AL031311, AL121658, AL031005, AL034429, AC003108, AP000089, AP000142, AL022316, AC007364, AC006539, AC004887, Z83826, AC002094, AC005049, AC006360, AL035400, AC002126, AC004526, AC004033, AL049766, AC005037, AC006362, AC004491, AD001527, Z99128, D87675, Z98304, AC006285, AC002996, Z84469, AF048729, AC003101, AL109627, AL049911, AL008719, AC005719, AC006947, AC007308, Z93244, AC003025, AC006455, AC000134, AC004878, U62317, AC005180, AC004985, AF001549, AC006552, Z83844, AC006480, AF111169, AC008273, AF207550, Z83856, AL050318, AC007263, AC006312, AL079342, AP000961, AC000120, AC005800, AC005089, AC007878, AC005229, AC004996, AC004223, AC003663, AC007201, AC006344, AL031228, AL133245, AF139813, AF205588, AC004821, Z97053, AC002470, AF047825, AC004655, U91326, U80460, AC005520, Z98752, AF111170, AC003982, AF030453, AF030690, AC004386, AP000104, U95090, AC002306, AL096767, AC005632, AF196779, AC003690,

HCUEB62	557	579058	1 - 364	15 - 378	AC006530, AL031774, D63507, AC004131, AC002302, AC007056, AF108083, AC004962, AF086394, AL031230, AL111337, AC005670, AL035413, AL031447, AF024533, AC002044, AC007566, AJ246003, Z84480, AC007934, AC006026, AC005071, AL031427, AC002565, AC009248, AL109657, AL121653, AL023575, AC005399, and AC003103.
HCUEC06	558	935769	1 - 94	15 - 108	
HCUEC78	559	850066	1 - 319	15 - 333	H81012, H86221, AA018923, R64467, M87891, U14684, AL034429, AC004938, AC007376, AC004188, AC006480, U14701, AL022316, AC002477, AC005527, AC002416, Y14768, AC005620, AC005197, AC005907, AC000052, AL020993, AC002375, AC007055, AC006538, AP000505, AP000516, AC007707, U91629, AC004797, AC006263, AC005488, AC005914, Z82201, AC005529, AC005911, AC005410, AC007666, AC004019, AF111168, AF129756, AC005399, AC006449, AL139054, AL035587, AC005632, AP000512, AC005746, AC002310, Z74739, AC006511, AL023803, AC005667, AF001975, AC005753, AC004678, AL022237, AC002303, AL034420, AL021578, AL133448, AP001065, AL031311, AF053356, AC003043, AP000065, AC005971, AP000354, AF045555, AC004859, AC002551, AL118497, AC005003, AF134726, AC000405, AF165926, AL035086, AC005841, AL133163, AL050321, AL035405, U12387, AC007686, AC008015, AC005722, Z95114, AB014087, AL049766, AL020997, AL031447, AF001549, AL096677, AC006211, AC005777, AC005288, AL050308, AP000555, AC005409, AC005088, AC002104, AC004686, AC000025, AL031985, AC003663, AC004671, AL121603, AC002492, AC004190, AC005037, Z98941, AC003663, AC005619, Z81365, AL022326, L78833, AC005682, AL008718, AF037338, AL031662, AC005954, Z97876, AC006130, and AC005486.
HCUED04	560	615410	1 - 324	15 - 338	Z94044, AC005480, AC006388, and AL022316.
HCUED66	561	576573	1 - 449	15 - 463	
HCUEE04	562	653118	1 - 290	15 - 304	AA305339, AL121572, and AL022341.
HCUEE29	563	578709	1 - 240	15 - 254	AW297855, AA932284, AI911033, AI540093, AW105017, AA829228, AA814442, and AA768919.
HCUEE41	564	578715	1 - 235	15 - 249	
HCUEE63	565	745184	1 - 100	15 - 114	AP000096, and AP000240.
HCUEE66	566	578702	1 - 207	15 - 221	F37223, AW419118, F31799, AI446638, F23274, H64560, AI791610, AI867044, AW023672, AA381762, AA299115, AA548087, AI223616, AI287485, AW078552, AI053465, AI918421, AA399158, C06471, AI679713, H04867, AW130254, AA086236, AA469451, AW341903, AI439269, AI151261, N25303, AW129694, AI635274, AI679139, AI338426, AW302013, AI240891, AW152111, AI285696, M77950, AA913549, AW057776, AL044858, AA584489, AL138421, AI565873, R94974, AA609841, T47280, N58729, AA229444, AL039187, AA913114, AA302732, AI939465, AA527606, AA527716, AW130535, N20066, AW085801, AI110688,

AA230143, AI469968, AW273469, AI753365, AA573540, N35896, AI888752, AI821044,
AW192199, H47540, AI732239, AI267356, AI075744, AA757743, AA629702, AI536625,
AA329321, H08791, AI821467, AI754023, W90237, R94721, AI124660, AI370270, H71349,
AA528390, AA347835, AW085991, H86579, AI932884, AI207584, AA721577, AI570261,
AA947837, AA018923, AA012829, AW368401, AA323085, R71981, AA720664, AW131213,
AI811460, AA384039, AI539776, AA078483, AI267450, AI201668, AI929796, H96823,
AW175641, AW192518, AC004935, AL096775, AC006571, AL022330, U80017, AL117694,
U78308, AC004032, Z99128, AC000070, AP000080, AF049895, AL096774, AC005740,
AC004582, AP000134, AP000212, AP000030, U40369, AP000356, AC006001, D87675,
AC002451, AC007842, AF070717, AL009173, AC020663, AC002350, U76377, AL033539,
AL035411, U02068, AL031005, AP000320, AC004617, AP000251, AL132712, AC005485,
AL034430, AL096755, AL049874, AC004895, AL109985, Z72521, AC002369, AC006328,
AC007681, AC005911, AC000003, Z94277, AC006561, AL022237, AL135744, AC004258,
AC004773, AC006146, M87914, AC005291, AC007543, AL035681, AP000120, AP000167,
AP000052, AL034417, AC005215, AL023577, AC005150, AL022395, AC007919, AC005007,
AC007327, AP000502, AF064857, Z93241, AC005040, AC002524, AC006312, AC006062,
U73168, AC007227, AP000353, AL022323, AC000039, AC005771, AC005759, AC003102, AC007381,
AC006120, Z98255, AF095725, AC000039, AC005771, AC005759, AC003102, AC007381,
AL096707, AC002126, AC007565, AC007501, AC007632, AC002985, AP000142, AF117829,
AP000113, U60274, AC007314, AC006538, AP000090, AF134726, Z83845, AC005516, U07000,
Z98050, AC004841, Z95115, AC002565, AL020993, AC008125, AC002564, AL121653,
AC003109, AF111168, AC005703, AL049712, AC006544, AC005095, D00591, AC002504,
AC005264, AC005209, AC005102, AC005180, Z99943, AC004511, AC004024, AL022324,
AC004003, AL035410, AC012599, Y14768, AC005993, AC004152, AC016025, AC007250,
AC007050, AC005595, AC004813, AJ003147, AC006251, AC005788, AC005200, AC005245,
AL049576, AL031846, AL034402, AL022320, AC005280, AL049557, AL078639, AC006543,
AC005875, AC007387, AC007695, AC002056, AC004462, AC008134, Z75888, AC005841,
AF003627, AP000143, AF129756, Z83844, AC002525, AC005994, AC005304, AC005914,
AC005251, AC007966, AL022318, AL035587, AC009946, Z86061, AC005696, Z80232,
AL035659, U47924, AC003041, AL022578, AC004584, AC006013, AC002314, AC007537,
AL035415, AC004517, AC005003, Z99497, AC004491, AC004453, AF123462, AP000031,
AC004678, AL021453, AF053356, Z83826, AC004745, Z93942, AC006455, AC005829,
AC000379, AC004650, AL031709, AC005670, AL022328, AL035450, Z75887, AL117354,
AC005520, AC004230, Z68756, AL021808, AC006515, AL021395, AC007308, AC007207,
AL117256, AC007666, AC004838, AC007845, AL021368, AL031584, AC000072, AL031729,
AC002470, AP000966, AF079797, AC005328, AC005909, Z83851, AC008062, Y11873,
AL109628, AC003688, AC005031, AB017652, Z93783, L77569, AC008273, AC007878, and

HCUEE83	567	578703	1 - 406	15 - 420	AC006948.
					AI801482, AA847499, AA493621, AI281697, AA649642, AI783494, AA502711, AI358501, AI613280, AII192631, AL138421, AA368936, AA846935, AW407578, AA711891, AW276435, AI282511, AI338350, AA491862, AI281881, AA573543, AW338086, AA467820, AW021583, AL036037, M86143, AA744018, AI537955, AI903462, AA526758, AW028403, AW406447, AW408047, AA469451, AI919265, AI824562, AA526536, AA658362, AI635458, AI281903, AA491650, AI633390, AW264934, AI457397, AI921296, AA507824, AI473475, AA468244, AA468505, AI610607, AI469172, AI570212, W38404, AW129694, AA133333, AI110770, AI093122, AI745325, AII133164, AA405493, AA526779, AA629874, AA523838, AI832016, AA743716, AA577959, AA516020, AI676218, AW130535, AW148792, AA492081, AA578481, AW084252, AI379719, AW044351, AW085740, AA134959, AI287528, AA484373, AL031281, AC006160, AC005324, X54180, X5593l, AC004813, AC006241, L47234, Z82097, AC003007, AL022313, AP000031, AL035587, AC002996, AC005730, AC004605, AC005763, AC000070, AL021937, AC005632, AL021939, AF123462, AL009179, AC010200, AL022329, AC006130, U07562, X54175, AC004755, AC005212, AC003965, AC006026, AL109984, AC004019, AF196970, AC004492, AC004858, AL031432, AP000349, AC004671, AC007845, AL133448, AC003108, AC006275, AF196779, Z92845, AP000514, AC007193, AL031428, AC006275, AD000092, AP000359, AC005696, AC005527, M87919, AC004686, AF109907, AC005175, AP000135, AC006139, AC005183, AC008079, Z81313, AC002045, AC005901, AC005088, AC006058, AC005837, AP000117, AC002368, U47924, AC000052, AF165175, AC007666, AP000326, AC006040, AC006487, Z97630, AL031255, AL035411, AL121748, AC004984, Z69890, AC004152, AC006449, AC005102, AC008044, AF010238, AC002119, AP000503, AF039401, AC005529, Z83844, AP000054, AP000169, AP000122, Z84476, AC002385, AL034418, AC005531, AC007617, AL079295, AC003029, AC005988, Z93244, AC006001, AC004263, Z98051, AC002470, AL121778, Z98044, AC006205, AC004881, AC004156, AF165141, AC007919, AF088219, AF001549, AC002984, AC006251, AC003070, AC003665, AC002476, AC007324, AL049759, AC007766, AC003098, AC005410, AL049795, AP000244, AC002395, AC004827, AC005089, AC007055, AC004815, AB023049, AF111167, AL008635, AC004765, AC005839, AC007066, AC005237, AC004186, AL035086, AL035415, AF134726, AC006327, AC006285, AC003966, AC006960, AL079340, AC004913, U78027, AC005913, AC008101, AC005011, AL121769, AL049709, AC004228, AC005914, AL008583, AC004998, Z69838, AL031295, AC005231, Z97056, AL121934, AC002301, AL080243, AC012627, AB020871, AP000493, AC005231, Z97056, AL121934, AC002365, AC008055, AP000194, AL035422, AC005296, AC005057, AP000123, AP000213, AC002365, AC008055, AP000194, AL035422, AC005296, AC005412, AC004972, AF039907, AF038667, AL031602, AC006367, AL031283, AC005409, AL034421, AP000512, AF165142, Z84480, AC002316, AF053356, AC005756, AC000379, AC005778, AC005071, AC007262, Z98742, M84472, AC005332, Z84484, AC009044, AC007967,

HCUEF90	568	578714	1 - 199	15 - 213	AL133485, AL022318, AF024533, AL049776, AC005037, AC002312, AC005924, AC007298, AC005288, AC004234, and Z93241.
HCUEG58	569	784414	1 - 113	15 - 127	AC005913.
HCUEG90	570	578745	1 - 141	15 - 155	AF024533, AF030453, and AC005088.
HCUEJ55	571	959552	1 - 110	15 - 124	
HCUEJ69	572	757657	1 - 526	15 - 540	
HCUEK37	573	964869	1 - 331	15 - 345	AA782338.
HCUEL28	574	706456	1 - 289	15 - 303	AI097211, AI446336, R92902, AI539685, AA775205, AI438967, AC007021, AC007564, U95739, AL049576, AC006077, AC006312, AC006312, Z85987, AC005821, AC003663, AC006323, U95743, AC003026, AC011331, AF001549, AF029308, AC003037, AL136453, AC006965, AC005011, AC005764, AL023807, AL096774, AC005740, and AC005886.
HCUEL91	575	576568	1 - 119	15 - 133	
HCUEM23	576	576379	1 - 373	15 - 387	AC006531.
HCUEM35	577	861545	1 - 307	15 - 321	
HCUEM62	578	576575	1 - 248	15 - 262	
HCUEN34	579	706452	1 - 333	15 - 347	
HCUEN58	580	738225	1 - 453	15 - 467	
HCUEO17	581	932118	1 - 252	15 - 266	
HCUEO30	582	769203	1 - 274	15 - 288	AL039309, AA985145, AA558404, N52501, AI884861, AA657910, T55707, AA904211, H48017, AI431513, AI049504, AW341882, AA486819, H86579, AA774006, AA662431, AI800343, AA584756, T02817, H47295, AW089016, AA527109, AA502813, AA018923, AA012829, AI58391, AI816136, AW081503, AI471455, AW407388, AA053463, AW117723, AI826857, AW392414, AI251576, AI687343, AI306232, AW274191, W63553, AI583466, AI201668, T59930, R48980, AI306717, AI811647, AA429481, N22395, AA368329, AA599749, AA577855, AI031759, AA827383, T74524, AA214109, AA768179, AI628859, AW019964, AA434078, W92433, AI801824, AA339789, H86133, AA347867, AW301855, AA767257, AA548692, AW148886, AI697383, AI065031, AW029626, AI888050, AW117704, AI417586, AI300818, AL041924, AI310992, AA745628, AI267356, AA278496, AA287502, AI267459, AI369925, AA535756, AI434365, AA573000, AA374797, R02063, AW009653, AI831172, AA993165, N59744, H53284, AI279417, H73306, AI002863, AI869797, H54252, AL041352, AI049680, AA302978, H47296, AA916794, R84528, AA947265, AA078509, AW190277, AA486820, AI340151, AA364073, AA374525, R39627, AI872461, AA230146, AA773171, AW162303, AW084173, AA878407, AI459866, AW162047, AA295899, AI277318, AI860535, AW161786, AW117915, T51436, AI873627, AC002128, AC006356, AC004685, AL050338, AC004554, AC005518, AC006512, AC006023, AC008101, AC008079, AC007567, AC005722, AL031985,

HCUEO31	583	576551	1 - 229	15 - 243	AL022329, AF111168, L48038, AC005516, U94776, Z83822, Z82190, AC000134, AL078621, AC005214, AP000566, AL031284, AC002301, AL031657, AC006026, AL078593, AC003695, AC002091, AC005906, L78833, AL049829, AC005747, AL023799, AL121754, Z82215, AC007435, AC007676, AC003692, AC006044, AC004878, AF196970, AL034420, AL022326, AC004033, AL020995, AB011399, AP000355, AC007731, AC005500, AL022476, AL133500, AB016897, AL121923, AC006344, AF024534, AF024533, AL109827, AL050321, AC005086, AC007225, AC005355, AC005049, AC004156, AC002070, AL109956, AL008718, AC018633, AL050348, AP000557, AL031255, AC000026, AC002563, AC004134, AC006958, AL022336, AF053356, AP000556, AP000359, AC005740, AC004139, AC005005, AF068862, AL031728, AC002059, AL050318, AL022577, AL117351, AC004031, AL121652, AL117354, AF047825, AL109983, AF190641, AP000091, AF107257, AP000236, AL096818, AP000690, AL021878, AP000689, AC007279, AC007444, AC004612, AC002504, AL096504, AF134471, AC004381, Z84466, U92032, AP000558, AC004034, AC004234, AL031295, AC007934, AC008080, Z85996, AL049869, AC006312, AC004099, AC004217, AL109847, AC005192, AB018295, AL021707, AC007551, Z96074, AL022721, AL121603, AC007878, Z98941, Z97333, Z97334, U62292, AD000812, Z49235, D86995, AC007792, AC002126, AL035659, AC005231, AC007324, Z93020, AL049759, Z83838, AC002351, AP000555, AC016027, AP000501, AC016830, AC005015, U47924, AC004943, AL034549, AL035469, Z68873, AC006323, AC002407, AP000952, AC004148, AL022718, AC000004, AC007556, AC008041, AL136295, AC006530, AL049830, AC004150, AC004814, AC006210, AC006406, AC002524, AL035415, AC009247, AC007510, AC004832, AL136501, AC006538, AP000510, Z84487, AC004012, AD000684, AP000433, AP000067, AC005004, AF196971, AC002551, AC005666, AL133448, AF001550, Z76735, AL022165, Z82189, AC006211, AC006468, AL021939, AF049895, AL031289, AC007228, AB023050, AL096701, AC009516, AC004771, AL078581, AL031588, AL137191, AC007057, AL049872, Y10196, AL096755, AL022318, AL049569, L29766, AC000063, AC005300, AC006409, AL078583, AC004953, AP001053, AC005696, AC006946, AC006359, AL050341, AC005971, AC008170, AC002530, U51560, AC002314, AC005619, Z80896, AL024474, AL031275, Z95113, AL049843, AL035407, AC004900, Z97832, AC005730, and AC002302.
HCUEO41	584	576524	1 - 447	15 - 461	AW248352, AW249168, and AA628425.
HCUEO62	585	578713	1 - 387	15 - 401	
HCUEO79	586	850090	1 - 330	15 - 344	AA129273, AA129373, AI761842, F20339, AW291115, AA485396, AW079768, AI287824, AW243878, F32537, AW190297, AI379711, AI828574, AA830626, AI758715, AA464646, AI560298, AA629936, W31910, AA936135, AA810103, AW087812, AI801167, AI559162, AW087203, AL021407, AL137300, AF019767, AL133104, AC002480, AF030635, and L78810.

HCUEP01	587	913675	1 - 449	15 - 463	AC004967, AC005206, AC005667, and AC005519.
HCUEQ37	588	881486	1 - 349	15 - 363	AL008718.
HCUEQ56	589	751410	1 - 442	15 - 456	AW452694, and AA972635.
HCUES29	590	579033	1 - 406	15 - 420	
HCUES34	591	850096	1 - 406	15 - 420	AA084609, AI312309, AI678287, AW151848, AA757621, AL037927, AI962030, AI306717, AW084173, AI567076, AA984920, AW023389, AW402784, AI065031, AL042753, AW238495, AI186233, AA825827, AA496309, AA584655, AA747375, AA584756, AI689135, AW192179, H29914, T67090, AI303008, H40478, AW328027, AA551548, AL078581, AC007199, AC005821, AC005736, AC005081, AC005722, AC007285, AC005520, AL049301, AL049538, U80017, AC002477, AC020663, AL031311, AL021453, AC005015, Z69921, AF129756, AC000120, AC002314, AC006530, Z69653, AP000065, AL035400, AC005519, AP000512, AB001523, AL117258, AF207550, Z98742, Z99128, AC007225, AC004858, AC006146, AC005696, AC007386, AL133245, AP000121, AC007686, AP000045, AC007363, AC000041, AC002115, Z86090, AP000704, AC002350, AC005102, AL049697, AC005057, AC007537, AF064861, AC002306, AC005280, AC004560, AC003957, AL031602, Z98941, AC005899, AC005837, AC005488, AC002059, AC000353, AC004622, U91326, AC004531, Z83856, AP000688, AF111167, AC004967, AL022316, AC002544, AC005746, AC004841, AC000118, AF001548, AC005682, AL049758, AC005220, AC003041, Z93930, AC007327, AC006312, AC004796, Z93244, AC004685, AC005829, AB003151, L44140, AC004962, AC004659, AC005562, AC007868, AC004408, AL096701, AC005049, AC004019, AC005500, AL023553, AB014079, AF165926, AL078463, AC009509, AC004477, X64467, AC006026, U63721, AC006120, L77570, AC004263, AL009179, Z95152, AF111168, AC004491, AC007240, AC006023, AF053356, AL022326, Z97054, AC007731, AC001231, AC005484, AC003982, AC005094, AC004686, Z83844, AP001058, AC000159, AC007367, AL031985, AC005412, AL049843, AC006538, AL021917, AF045555, AC006077, AL031295, AC003029, AC004383, AC002039, Z81364, AP000008, AC002492, AP000208, AP000130, AL096791, AC004148, AP000355, AF196969, AC002312, AL031662, AP000556, AL139054, AC007637, AC006111, AC005387, AC005355, AC012384, AC005288, AL021546, AC006254, AC007536, AC005031, AL035420, AL022165, AC004655, AC004583, AC004876, AC005529, AP000044, AL049776, AF003626, AF196971, Z68284, AC007314, AC006130, AL034420, U91321, AC005632, AF006501, AC006101, AL109984, AC006285, AC005952, Z84466,.AC006141, AL049569, AC004675, AL009181, AC005237, AC005730, AC005772, AL031282, Z83826, AP000558, AC007384, AL031587, AC007387, AL050341, AL135744, AC008372, AC006011, AC005618, AP000113, AC000026, AF196970, AC002094, AC006014, AC007226, AC002395, U63630, AF001549, AP000692, AC006441, AC004859, Z97056, AL080243, U91321, AC002316, AD001527, AL109827, AC005756, Z95116, AF134726, AC005212, AC002324, AC006449, AP000248, D87675, AF038458, AC004941, AL020997, AC006947,

HCUES93	592	576498	1 - 415	15 - 429	AC002369, AL035086, AC005781, AP000555, AL121603, AL021707, AC007283, AC006344, AL133243, AC007263, AC005527, and AC007229.
HCUET13	593	657258	1 - 160	15 - 174	AC004821.
HCUET27	594	506339	1 - 167	15 - 181	AW292137, AL039500, AI248007, AI078021, AI759999, AI476735, and Z95437.
HCUEU10	595	964857	1 - 269	15 - 283	AA353854, AC004659, AC004771, AC005914, AC005245, and AC007182.
HCUEU20	596	970780	1 - 274	15 - 288	AC007281.
HCUEV08	597	959670	1 - 340	15 - 354	Z95116.
HCUEV17	598	905316	1 - 1428	15 - 1442	AA585439, Z28355, Z30131, AI525556, AI535639, AA585101, AI541374, AA585453, AI557731, AI547039, AI525431, D80253, AI541365, AL045817, AI525306, AL041142, AL041238, AL041133, AL047183, AL040322, AL041131, AL046330, AL041051, AL041292, AL040119, AL047036, AL047170, AL047057, AL047219, AL041227, AL040463, AL039915, AL040625, AL043612, AL041197, AL040155, AL041346, AL040529, AL041096, AL047012, AL041358, AL041277, AL041163, AL041098, AL040621, AL043538, AL041324, AL040464, AL044162, AL041086, AL043496, AL041296, AL041233, AI540967, AL040510, AL041159, AL045725, AL041140, AI546999, AL040193, T11028, AL043467, AL044186, AL041278, AL044037, AL040091, AL040128, AL040168, AL040553, AL040255, AL040285, AL040342, AL040332, AL040617, AL045684, D61254, AL040745, AL040370, AL043677, AL046442, R29445, AL040149, AL040839, AL041752, AL043775, AL044165, AL043492, AL041602, AL045920, AL038838, AI546945, AL044074, AL041635, AL045990, AL040253, AL040458, AL044199, AL044187, AL040090, AL040263, AL040294, AL040329, AL040082, AL044272, AL041186, AL040148, AL041730, AL041523, AL043627, AL046392, AL041374, AL040052, AL043845, AL043537, AI541523, AL039338, AL042135, AL044064, AL038983, AL039316, AL043923, AL043814, AL043848, AL041459, AL043570, AL041577, AL044201, AL044258, AL046850, T23985, AL038532, AL040768, AL037727, AI526194, AL046994, AL040414, AL040571, AL040576, AL046914, AI142134, AL045753, AL044274, AL079878, AL049018, AL040444, AL045857, AL039744, R28735, AL038822, AL045671, AI536138, AL040238, AL046327, AL041168, AL049069, AL040444, AL040075, AI557262, AI541514, AL041246, AL040472, AL041347, AI541535, AL041955, AL038761, T23957, AL080031, T41289, AL045989, AI556967, AI546828, AA585476, R29177, AL044529, AI525316, AI557787, AI526073, D51250, AL046147, T23888, D80219, AI546891, AI546855, AL039643, AI541508, C16305, AI525320, AL042096, AI526140, D59787, AL037436, AA585434, AI541510, D80043, AL039360, AL037435, C16300, AL039924, D80227, AL045794, AI535983, AL044125, AA585356, AA174170, D57491, AL079852, AI541307, D80240, AI535660, AI557799, AI546875, AA585440, AI541017, AL043441, AL039150, AI557807, AI541205, AL038821, AL039085, D80134, AL043445, AI541534, AI541509, AL045211, AL039156, D51423, D55233, AI557238, T24119, AL039564, AL039538, T11051, AL039678, AL039108, AL039074, AL038837, AL039625,

AL039648, AL039629, AL037726, AL038531, AL039109, AL040992, AL039128, AL044407, AL039386, AL036973, AL045337, A49045, AR062871, AR054109, I44516, AR035224, A94046, A94054, AR038307, AR038321, I25027, I44515, I26928, I26930, I26927, AR009151, AR027099, A29109, A32111, AR068508, AR068550, AR068510, AR068509, A23373, AR068551, I58322, I58323, I91969, A91752, A91751, I25041, A92081, A92080, A92077, A92078, A92079, I07209, I07249, A63954, AR009152, AR017907, AR062872, AR062873, A20702, A20700, A43189, A43188, A84772, A84776, A84773, A84775, A84774, AR067731, AR067732, A58522, A91750, I05430, I05393, A10617, AR028792, A01324, A01323, AR034783, I63120, AR067733, AR064322, AR064323, AR064320, AR064321, A94048, A94061, I85513, A70359, A32110, A83642, A83643, AR018924, AR018923, A48774, A48775, AR000006, AR015960, AR015961, AR000007, AR051652, A92666, A92668, I49890, A92667, A92665, AR019094, AR028791, AR028793, AR003585, A18053, A75888, I70384, A18050, AR007512, A91754, A44171, A63067, A51047, A63064, A63072, A49700, AR031375, AR068506, I58669, A58521, A60213, A23334, A60207, A60208, A60111, A23633, I06859, I66487, A02712, A95051, AR043601, I84554, I84553, E13740, A35536, A35537, I13349, I60241, A11245, I60242, A02135, A02136, A04663, A04664, A02710, E12615, AR035193, A92133, A07700, A13392, A13393, I6498, I66497, I66496, I66486, AR027100, I28266, I21869, A70040, A10361, AR031374, I08051, AR038066, A95117, I19525, M28262, A91965, U87250, AR051957, I66494, I66495, AR035975, AR035977, AR067734, I48927, A25909, AF082186, AJ244004, AJ244005, AJ244003, AR038855, A98767, A93963, A93964, X68127, AJ243486, AR038762, AR051651, S78798, A98420, A98423, A98432, A98436, A98417, A98427, AR035974, AR035976, AR035978, A85395, A85476, Y16359, D78345, AR025207, AR037157, I18371, I44681, A67220, AR008430, AR066482, A85477, A85396, X83865, AR016495, D34614, A86792, A93936, AJ244007, A93016, A58524, A58523, I15717, I15718, E03627, A60212, A60209, A60210, A60211, A77094, A77095, A81878, A64973, I08396, I62368, I00682, A11623, E00609, A11624, A11178, E01007, I08395, X55486, I03331, E14304, AR031488, I13521, I52048, A27396, I44531, E16678, A82653, E16636, A90655, I18895, A24783, A24782, A27169, I09267, I09270, and I09268.	15 - 407	
AA531044, AA366245, H88258, AI636734, AI870453, AA508036, AA525293, AA469327, AA877992, AA593471, AI918419, AI609972, AI305258, T05834, T40388, AW192330, AI623563, AW089016, AI270476, AA564671, R82650, AA493789, AA947369, AI275183, AW162227, AI750125, AA502207, AW102811, AI926102, AA482953, AA366601, AI306717, AA601728, AI521525, AA381762, AA581247, H71738, T95676, AI915293, AI587467, AA613164, AA779783, AL119247, R92629, AI524540, AA084609, F35097, AA525331, AI537368, AI280535, AA595554, AI580707, AI689019, AA228778, AW020150, AA568980, C14480, T54464, AI753365, AA536040, AC007308, AC002470, AC003663, AC007546, AC007686, Z84469, AD000812, AP001053, AC004491, AC004491, AC004817, AP000702, AC005225, AC007041, AF001549, AL133382, AF024534, Z98200, AL031257, AC002477, AC005736, AC004991,	1 - 393	
	750364	
HCUEV65	599	

HCUEV82	600	881370	1 - 224	15 - 238	Z99128, AC005924, AC006165, AC005037, AL021546, Z95116, AC005620, AP000141, AC007938, AC002126, AC002375, AC007057, AL035587, AC007731, AL049872, AC005102, AC007298, AF060568, AC005666, AC004859, AC003043, AC007011, AC005500, AC005911, AL035072, AF207550, AL034343, AL049764, AC005325, AL121603, AL049694, AP000065, AF053356, AC005971, AL031985, AC006958, AL109801, AL049757, AL049760, AC002350, AC004985, AC005086, AC005207, AB003151, AC006211, AC005821, AC002115, AC005081, AC002996, AC004953, AL049795, AP000688, AL117694, AL078463, AC004805, AL109628, AC007314, Z95114, AL031432, AB023051, AL049869, AP000300, AC004477, AC002316, AC000085, AC005206, AL035249, Z81314, AC009510, AC002550, AC005175, AC004560, Z94802, AC004777, AL109963, AC007327, AC005484, AC005480, AF165926, AC004955, AC004551, Z82217, AC006501, AC002400, AC004883, AC002990, AC005005, AC006111, AC005585, AF196779, AC004079, AC004033, AC005412, AC007226, Z83822, AL009181, Z98257, AC007993, AC007227, AC005752, AC005921, AF038458, AC002425, U80017, AC002094, AC002300, AC004217, AL022238, AC004815, AC018633, AL109952, AL034429, AL049631, AC007382, Z97352, AC004549, AL031777, AC009464, AC005057, U95090, AC004890, AC007917, AL117354, AF001550, AF111169, AC005667, AC004778, AC004796, AC005914, AC004099, AC007690, Z98752, AC003029, AC006312, AP000032, AL008718, AL031659, AL031680, AC004386, AL096701, AC007199, AC008038, AC004167, AC004922, AP000045, AP000113, AP000116, AL021578, AC003101, AC002544, AL031984, U78027, AC005011, AC005274, AL049748, L23859, AC005740, AP000512, AC006023, AL122020, AL021155, AL035683, AC004212, AP000311, AC004156, AC005722, Z85986, AC005529, AL031594, AL049643, AC004616, AC005330, AC005305, AC005907, AC004967, AC002119, AC005355, AC006449, AC005913, AC005332, AL133353, AL049843, AC019014, AC005328, AC005071, AC004000, AC005058, AD000092, AC006509, AC005377, AL078638, AC006011, AC004526, Z93930, D87675, AC005783, AL022302, AC004876, AC006237, AL049709, AC006276, AP000143, AP000047, AC004743, AC007225, L78833, AC004263, and AL035422.
					AA348602, AI383596, AI798313, AI089178, AA553900, AL042987, M78032, AI809300, AA857812, AI038324, AI241637, AI347649, AI347852, AA179940, AA657416, AA655005, AA021139, AI309943, AW438946, AA558366, AA346861, AI474127, AA831426, AI090377, AA594719, AA484892, AI188049, AI192465, AI347478, W76645, AA526542, AA569065, AI754421, R67701, AA683091, AA350406, R93854, AA215585, AA326452, AW264393, AA047849, AA808631, N47855, AW327852, AA557911, AI803741, AA572921, AI923052, N52323, AA297443, AC002429, AC005907, AL031311, AC005527, AL049636, AC003029, AC004584, AC000035, AC004966, Z85987, AC005529, AC005535, AC005036, AC004876, AC002312, AC000025, U82083, AL049872, AC004910, AL031005, Z94802, AC005057, AD000092, AC004841, D87675, AC004953, AC006487, AC004056, U73634, AL031295,